FLIGHT
The AIRCRAFT ENGINEER & AIRSHIPS

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CONTENTS

DIARY OF CURRENT AND FORTHCOMING EVENTS

Club Secretaries and others desirous of announcing the dates of important fixtures are invited to send particulars for inclusion in this list—

1928

July — .... Aerial Derby
Aug. 4 .... Close of *Philadelphia Bulletin* Atlantic Flight Prize
Aug. 6 .... Air League Challenge Cup, Norwich
Aug. 27-31 U.S. National Baby 'Plane Meeting, Milwaukee
Oct. 7-28 International Aircraft Exhibition, Berlin
Oct. 8 .... Aero Golfing Soc.—Team Match v. Stage G.C.
Oct. 24 .... Aero Golfing Soc.—"Cellon" Challenge Cup

1929

Oct. 31 .... Guggenheim Safe-Aircraft Competition Closes

EDITORIAL COMMENT

THE greatest British air race meeting of the year has been held, the King's Cup has been won for the second time by Capt. Hope, and a lady pilot, comparatively speaking a beginner, has secured third place in the race, and first place in the Siddeley Trophy Tour. Thus one may sum up as briefly as possible the results of the great race. Although not particularly spectacular, the 1928 race for the King's Cup was undoubtedly a success. To begin with, it was planned on the right lines, being to all intents and purposes a race around Britain, and thus giving an opportunity to the greatest possible number of people to see the competing machines arrive at and depart from the various controls. FLIGHT has repeatedly advocated that this should be the first consideration, and in this year's race we have undoubtedly had an excellent form of propaganda for flying. We are aware that there is a tendency rather to belittle the lady pilot, the feeling in certain quarters being that she receives more public notice than is strictly her share. It should, however, be realised that the impression on the general public is an excellent one. If, the man in the street argues, a lady pilot can fly her own aeroplane—and not the latest type—around the greater part of Britain, covering a distance of more than 1,000 miles in two days, find her way, in spite of mists and fogs over very difficulty country, flying cannot be such a hazardous undertaking as might be supposed. And that is surely the very idea one wishes to take root. For that reason we are very glad that Miss Spooner did so well in the race. Indeed, at one time it looked as if she might be the winner, and but for losing her way very slightly, there is quite a possibility that she would have been the first to reach Brooklands.

The King's Cup Race

That the race should have been marred by a fatal accident is regrettable, but with so many machines competing, and weather conditions being what they were over the Newcastle-Renfrew section, perhaps we should be thankful that more mishaps did not occur. What was the exact cause of Warwick's crash will never be known, but it seems most likely that in

the mist he flew into the hillside without being aware of its presence. Such a thing might easily happen, even to a pilot of greater experience.

From a technical point of view, the two items of greatest interest in the race were the first participation in a great air race of the new de Havilland "Gipsy" engine, and the first appearance in an air race of the Cierva "Autogiro."

Of the "Gipsy" engines, it may be said that they did extremely well. Three were entered; three started; three finished, and obtained first, fourth and sixth place. That is a very good record for a new type of engine, and augurs well for the future success of the latest addition to medium-powered British aero engines.

Unfortunately, the "Autogiro" did not have an opportunity to show what it really can do. The take-off at Hendon was somewhat unusual, due to the fact that no power-starting arrangement has yet been incorporated. This meant that, after the starter's flag dropped, the machine was obliged to taxy around the aerodrome for a complete circuit in order to get the "windmill" up to its proper speed before taking the machine off. We do not know whether the handicappers had taken this into account, but it seems to us that it would have been fair to do so. However that may be, it did not matter as things turned out, since the machine met with a mishap on its way from Norwich to Birmingham. Without going into exact details, it is gathered that the machine ran out of petrol and that, in making a forced landing, one of the vanes of the windmill struck a tree and was damaged. This was the longest leg of the course, which may have accounted for the petrol running short.

As a race, the King's Cup Race was somewhat remarkable for the close finish of the first machines home, and the handicappers are to be congratulated on their work, which is difficult at any time, but much more so on a circuit of more than 1,000 miles. It is quite certain that no formula race could have produced anything like such close finishes, and as we have often pointed out, in this of all races, it is essential that it should be so planned as to appeal to the general public.

We do not for one moment suggest that a formula race should not be held. On the contrary, we agree with Capt. C. C. Walker, Chief Engineer of the De Havilland Aircraft Company, that at least one important formula race should be held every year. But this should be of a technical nature, and it would be unimportant whether or not it appealed to the general public.

If this year's King's Cup Race did not produce any new machines (the Simmonds "Spartan" has been designed for purposes very different from racing), it did cause the whole country to talk flying for two days, and that in itself is something to the good. The strenuous character of the race proved that our aero engines have now definitely become very reliable indeed, and that is bound to reflect favourably on British aviation at home and abroad; and so, taking it all around, one may write down the 1928 King's Cup Race a success.

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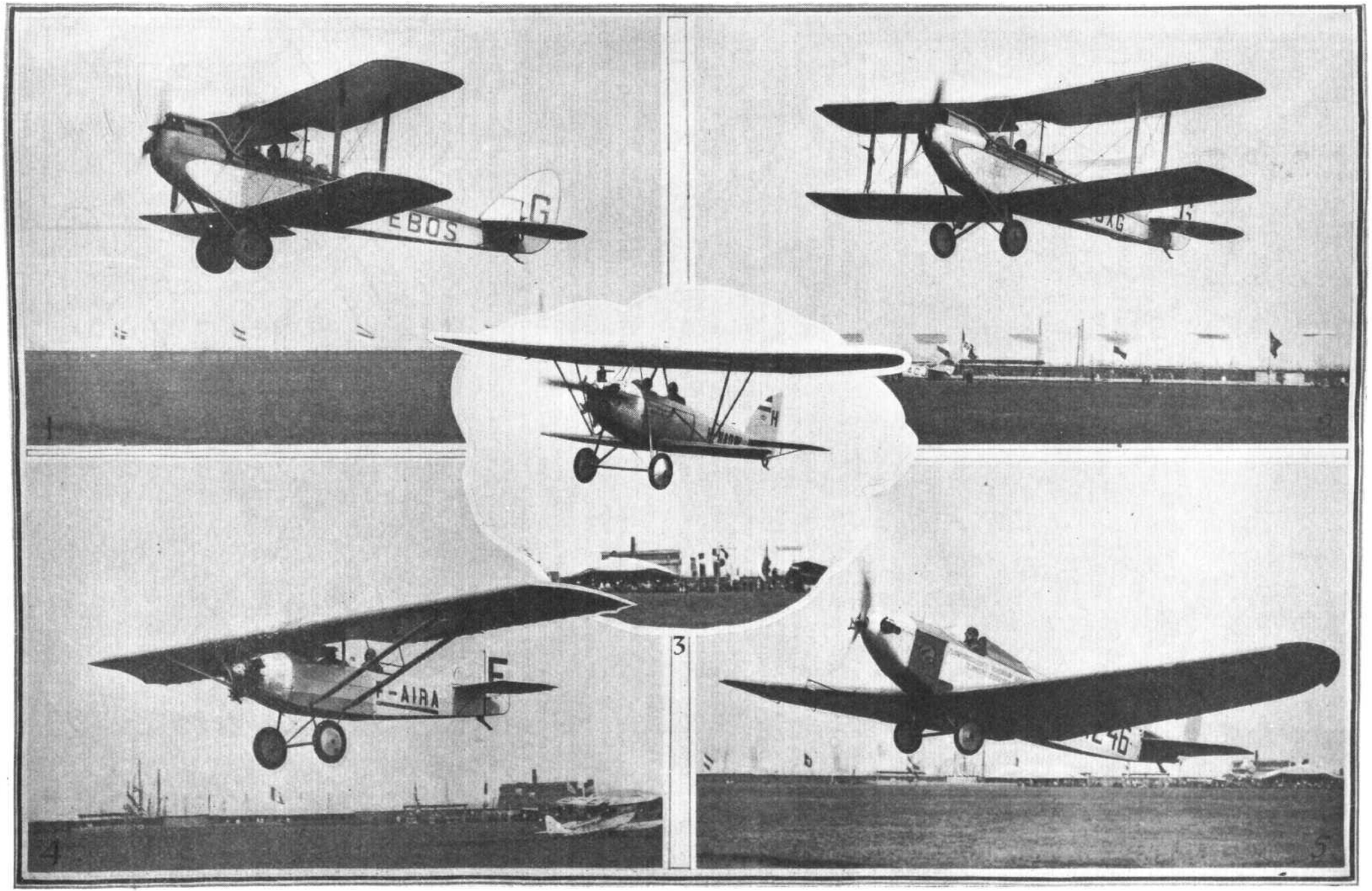
The Rotterdam Meeting

The first step in what we hope may become a wide-spread movement was taken at the Waalhaven, Rotterdam, aerodrome last Friday, when a number of machines arrived from England, France, Belgium and Germany to take part in a meeting and competition organised under F.A.I. regulations by the Rotterdamsche Aero Club. The competition itself was not a very serious affair, nor was it intended to be so. The great object which the organisers had in mind was to bring together flying folk from the various countries and thus to promote friendship and good feeling. And in doing that the Rotterdam meeting succeeded admirably.

It is the intention of the Rotterdam Aero Club to make this meeting an annual affair, and we are quite certain that next year, when, we are assured, care will be taken to see that the meeting does not clash, as it did this year, with any British flying event, there will be a very large number of machines taking part, whose registration letters commence with G-EB. It is very much to be hoped that the Royal Aero Club will organise in 1929 a meeting on similar lines, with the object of inducing foreign aviators to visit this country. Great sums of prize money are not required. As the secretary of the Rotterdam Club expressed it, "the great thing is so to plan the regulations that if competitors do not make very much, they do not lose anything either." That, we think, sums up the spirit of the Rotterdam Meeting of 1928, and is a very good pattern to take. One way of ensuring that the greatest possible number of machines should be entered was to present to each occupant of a machine a sum equivalent to approximately £6 towards hotel expenses, etc. Furthermore, once the machines reached the Waalhaven aerodrome, petrol and oil were supplied free of charge by the club, so that, except for wear and tear on machine and engine, the expenses incurred were very small indeed. In addition, the winner of first prize netted something like £100 which, if not a princely award, was by no means bad for three days' flying, quite apart from the fact that Dutch hospitality proved such that it was sheer joy to take part in the meeting.

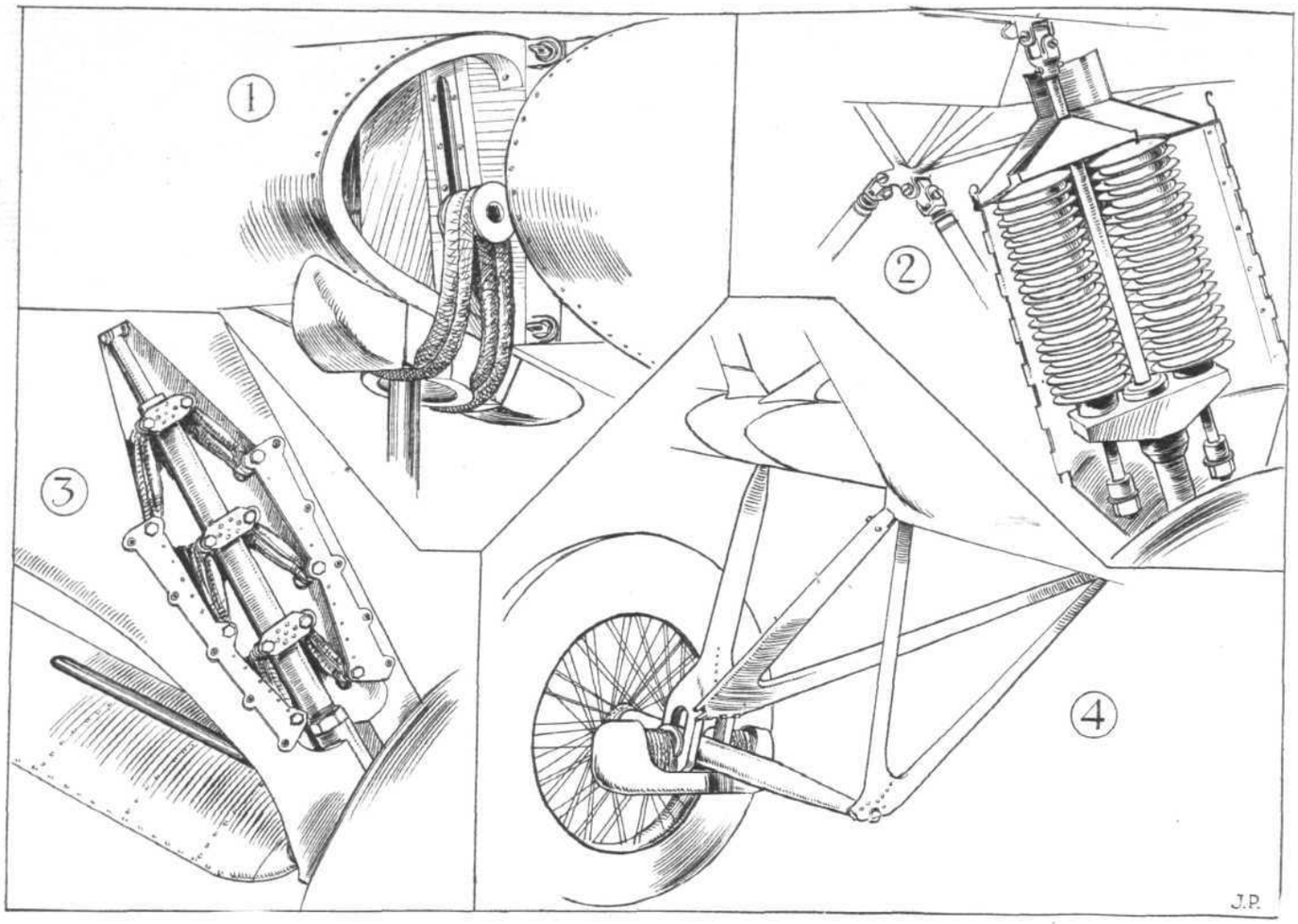
There are at least two distinct methods of ensuring a good entries list for a flying meeting: one is to offer very large prizes, and the other is to offer but relatively small prizes but to pay most of the expenses of competitors. The first method is likely to attract aircraft manufacturers, while the second, that invented and used by the Rotterdamsche Aero Club, is much more likely to appeal to clubs and private owners, some of whom may not be well able to afford to take part in a meeting if the expense of doing so is likely to be great, even if the prizes which it is possible to win are large. It is for this reason that we think the Rotterdam meeting was such an unqualified success socially, and we would recommend the Royal Aero Club to study the rules carefully so as to incorporate in any meeting of similar character which may be held in this country such of the rules and regulations as are applicable to British conditions.

Finally, on behalf of all the British visitors to the Rotterdam Meeting, we would express our sincerest thanks for the extraordinary kindness and hospitality with which all were received. It would be impossible to imagine anything more charming than the way in which everyone was made to feel comfortable and at home, and as our representative at the meeting points out in his report elsewhere in this issue, it will be none too easy, when we have a meeting in this country, to do as much for the Dutch. That they will be very heartily welcomed we have no doubt whatever.



"FLIGHT" *Photographs*

AT THE ROTTERDAM LIGHT 'PLANE MEETING: The take-off and landing competition. 1. Miss O'Brien taking off. 2. Mr. Cordes landing over the obstacle. 3. One of the Panders doing the landing. 4. The Caudron monoplane taking off. 5. The little Klemm-Daimler "zooms." (See p. 645.)



["FLIGHT" *Sketches*

VARIOUS WAYS OF USING RUBBER SHOCK ABSORBERS: 1, on the little Klemm-Daimler. 2, the compression rubbers on the Albatros "ASS." 3, the enclosed rubbers in the undercarriage leg of the Bernard single-seater fighter. 4, one-half of the Fiat biplane chassis.

BRITISH AERO INSTRUMENTS AT THE PARIS SHOW

AMONGST aircraft accessories none are so important as the instruments employed in navigating or controlling the aircraft, although we believe there are many who do not entirely appreciate how absolutely essential they are, especially as regards navigating instruments. For ourselves, we are afraid we have not devoted as much space in FLIGHT to descriptions and the use of aero instruments as we have wished to do, but in the near future we hope to have a great deal more to say on this subject—which is really quite an interesting one.

At the Paris Show, British instruments—which undoubtedly lead the world—were well represented on the Kirby-Smith stand. Here, in addition to the almost universally used "K.L.G." sparking plugs—another important aircraft "accessory"—could be seen a dashboard on which were mounted a number of S. Smith and Sons (M.A.) aero instruments, while a full range of navigating, etc., instruments by the well-known firm of Henry Hughes and Son, Ltd., were also exhibited.

"Smith's" altimeters, air and engine speed indicators, and other instruments should be familiar to readers of FLIGHT from our descriptions of these that have appeared from time to time, but hitherto we have not had the opportunity of describing any of the many interesting instruments produced by He ry Hughes and Son—for whom, incidentally, S. Smith and Sons are the selling agents. In the following notes, therefore, we propose to deal, briefly, with the instruments produced by Henry Hughes and Son.

First, let us refer to that instrument essential to every aircraft—the compass, of which we find a variety of models to suit different requirements. They are of the aperiodic, or "dead-beat" type, evolved by the late Comm. Campbell, R.N., and Dr. F. S. Bennett, F.R.S.—a type that has superseded all others for use on aircraft.

The original "Husun" Aperiodic compass, with certain modifications, is the 6/18 Mk. II and Mk. III, in which the "card" or magnetic element consists of eight filament wires radiating from a centre carrying the iridium point, with six small magnets fixed underneath. Four of the filaments are lettered N.E.S.W., but only the N-S are directional, the others being for damping purposes only. It is provided with a grid ring, divided every 2°. Illumination is carried out by a small electric lamp on the side of the instrument.

A further improvement on the 6/18 type is the P.2, which was used by Sir Alan Cobham on his big flights to the East, Africa, and Australia. It has an improved "card" and has been made more efficient by having the damping increased, the N-S filaments emphasised, and by the provision of four larger magnets instead of six smaller ones. A similar and smaller model to this, for light 'planes, is the Mk. III A, which was used by Bert Hinkler on his Australian flight, while another, compact, model of the same type is the P.4, which has, amongst other improvements, the inside of the bowl painted black against which the N-S shows up white; it is also fitted with a luminous "card" for night flying.

Two other important models are the O.2, or Observer's instrument, and the O.3, which is supplied to the Air Ministry (see Fig. 1 in our illustration). The O.2 is fitted with an azimuth ring carrying reflector, shades and prism, and its "card" is a special adaptation of the filament aperiodic type carrying a 2-in. mica card marked with the cardinal points, divided every 2°. The O.3 is an improved model, with luminous reading for night flying. It also has auxiliary filaments which read on a centesimal scale mounted inside the bowl. This model is much more useful as a directional instrument, and can be read either direct on the centesimal scale or through the prism.

Next we have the type 253 A.C., a pilot's or navigating compass, designed on the centesimal principle as in the O.3. This model is perhaps the simplest of all compasses to read. A second pattern of this model (see Fig. 4) is fitted with a domed or convex verge glass, which not only magnifies the "card" and scale, but brings up both so that the compass may be read when mounted level with the pilot's eye. The 253 D.B.—as used by Amundsen on his Polar Flight—is similar to the latter model, but having an additional thin mica ring card divided every degree, for direct reading on a lubber point.

AERO INSTRUMENTS AT THE PARIS SHOW: A few of the many Hughes' compasses, etc., to which reference is made in the text.

The S.O.2 compass is in two types, one, shown in Fig. 5, used for steering and the other for taking bearings. In the first type it is mounted at approximately eye level and the reading made by means of a vertical scale visible through a window in the side of the instrument. When used as an observer's compass, it is fitted with a rotating ring carrying a clamp, level, and full set of prismatic sighting gear, including prism for reading the card, dark reflector and two shades. The S.O.2 compass was used by Maj. de Pinedo.

But brief mention can be made of other "Husun" compasses, which include the following models :—5/27 D.B., a small form of the 253 D.B., designed for use in light 'planes. 259A, a compact compass employing the vertical mica band card, with filaments making it practically dead-beat. No. 256 is a seaplane compass of the liquid type with a vertical card. No. 254, a hand observation compass of the liquid type, fitted with a large adjustable prism and sighting attachment. No. 260, a small observer's compass, of liquid type, with strap for attaching to wrist. And finally, an airship compass, of the dead-beat liquid type.

From compasses, we come to a host of other instruments employed in aerial navigation. In the space at present at our disposal it is impossible to refer to these in detail, for to understand their use and operation would entail a somewhat lengthly description for each. However, they comprise instruments for ascertaining drift, of which there are a variety of models employing different methods of operation ; one of these, the Wind Star and Wind Gauge Bearing Plate Mk. II A, is shown in Fig. 2. Instruments for course-setting sights for bombing and navigation—including the Wimperis Marks I A and II ; the Waage Course Corrector, etc. Also, Sextants, such as the Booth or R.A.E. Bubble Sextants, which have been specially evolved for air work.

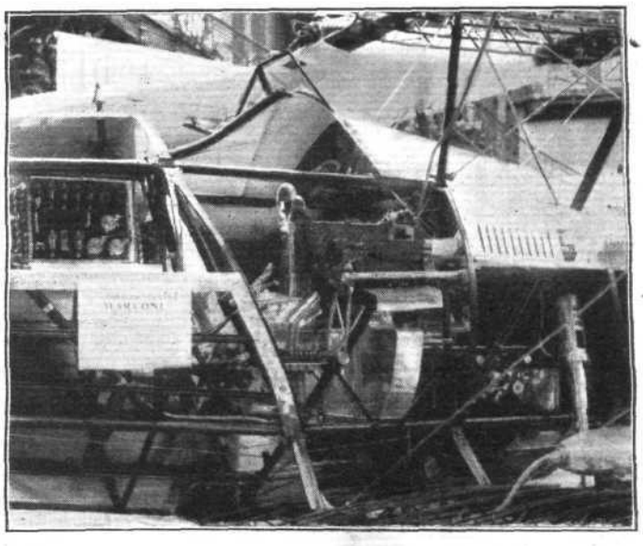
Finally, sundry other items, including the "Husun-Andrews" Enemy Speed Finder (Fig. 3), an ingenious and simple device for finding the speed and course of an enemy ship from an aircraft ; the Aldis Patent Camera Aiming Sight ; a torpedo directing sight for torpedo-carrying aircraft ; artillery spotters ; Cave-Brown-Cave binocular goggles ; and various devices connected with map-reading.

MARCONI APPARATUS AT THE PARIS AERO SHOW

BRITISH wireless apparatus for aircraft was represented at the Paris Aero Show by a Marconi Type AD.5 and 12 set fitted in the Bristol single-seater fighter.

The AD.5 and 12 set has been designed particularly to meet naval and military requirements, and for small machines whose mobility might be hindered by the employment of the ordinary trailing aerial. The set requires no trailing aerial, the whole of the aerial system being permanently attached to, and insulated from, the wings and fuselage of the aeroplane. In spite of the limited proportions of such an aerial, a high degree of efficiency in radiation is maintained by the use of relatively short wave-lengths.

The transmitter and receiver are each mounted as separate units, and either may be installed by itself if desired. The apparatus is extremely compact, and the remote control arrangements provided enable it to be mounted anywhere in the machine without interfering with the ability of the pilot to operate and adjust the apparatus when flying.



["FLIGHT" *Photograph*

AIRCRAFT WIRELESS : The Marconi installation in the Bristol Single-seater Fighter.

THE ARMSTRONG-SIDDELEY GEARED "JAGUAR"

THIS week we are able to give some brief particulars of a new Armstrong-Siddeley "Jaguar" modification—the provision of a new reduction gear. This reduction gear, which is of the plain epicyclic type, has been designed for use on the "Jaguar" engine, so as to give a greater airscrew efficiency, resulting also in a considerable gain in speed when flying level and a still more noticeable improvement in climb. The actual reduction in the speed of the airscrew shaft in relation to the crankshaft is 0·657 to 1, the gear itself adding a little over 100 lbs. to the weight of the engine, and but $3\frac{3}{8}$ in. to its length.

It should be noted that the geared "Jaguar" has successfully passed its 100 hours' type test at 1,850 r.p.m. normal, and 2,030 r.p.m. maximum. Furthermore, the fitting can now be confidently recommended, and has been designed in such a way that it can be added to existing "Jaguars" with comparatively small modifications.

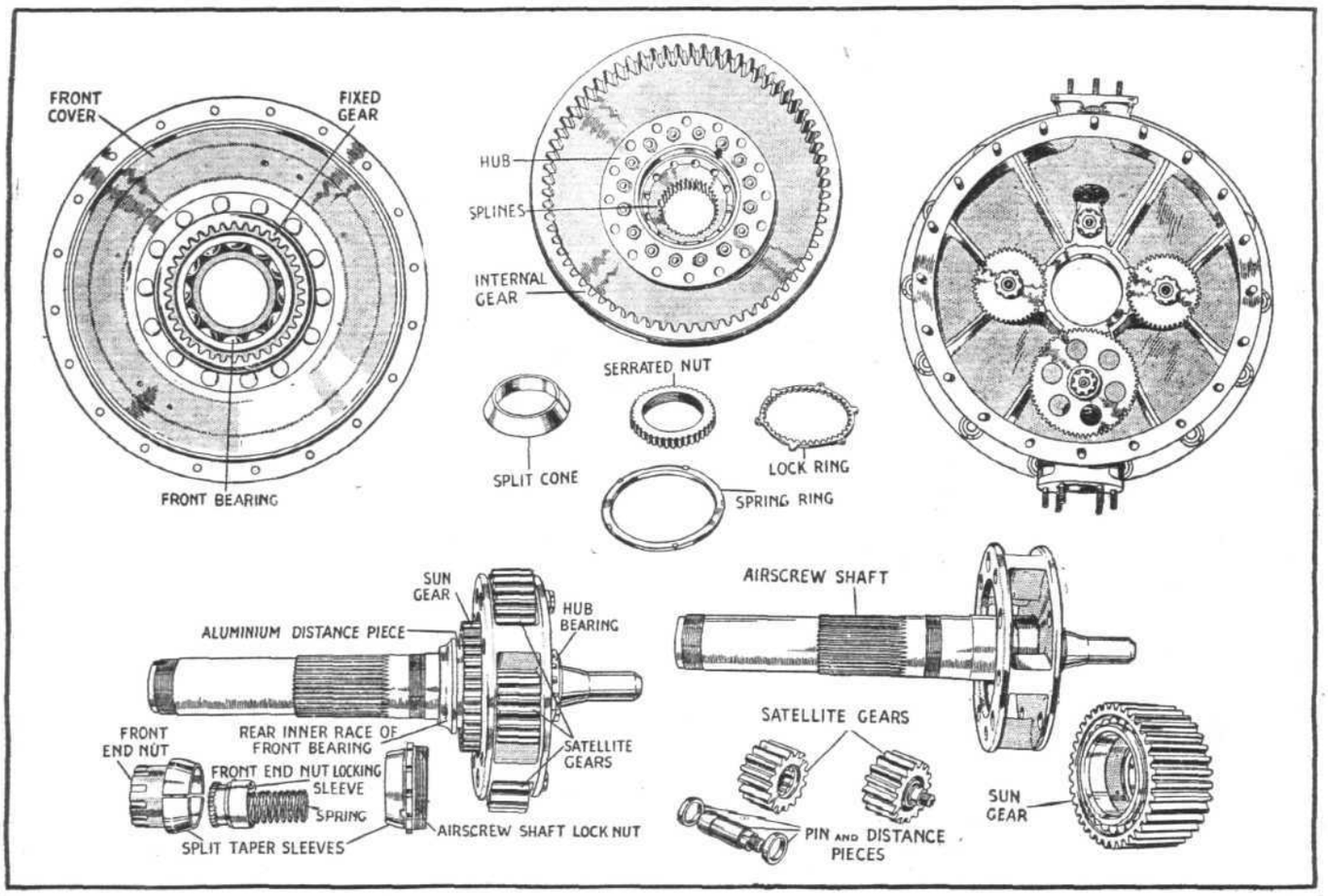
The following is a brief description of this reduction gear, and we also give some sketches of the principal component parts.

one with a housing for the pins on which the five satellite gears revolve. The gears are mounted on roller bearings, which run in case-hardened pins supported between two flat rims formed with the air-screw shaft. The threaded end of each pin is located by a key fitting a slot in the rim, where it is additionally secured by a castellated nut and split pin.

There is a distance piece between the inner face of each rim and sides of the rollers, three-thousandths of an inch end play being advisable at this point when the gear is correctly assembled. Correct fitting is facilitated by the numbering of each gear, pin, and rim hole.

The inner race of the sun gear's main roller bearing is driven on to the air-screw shaft, where it remains a fixture. The front ball bearing of the sun gear is always fitted and extracted in one piece, the gear with the outer part of its roller bearing being easily positioned on the shaft and being followed up by an aluminium distance piece, and the rear inner race of the front bearing.

The front cover accommodates the fixed gear into which



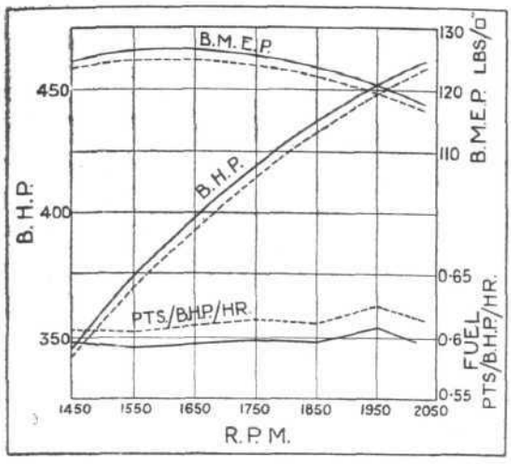
THE NEW ARMSTRONG-SIDDELEY "JAGUAR" REDUCTION GEAR: Some sketches of the principal *component parts, to which reference is made in the accompanying text.*

An internally-toothed gear wheel rotates at the same speed as the crankshaft to which it is attached. This internal gear drives satellite gears housed in a portion of the air screw shaft. These satellite gears revolve in the same direction as the crankshaft and internal gear, and in revolving cause their housing to turn in the same direction as the crankshaft only at a slower speed. Owing to the fact that all gears are turning in the same direction, *i.e.*, anti-clockwise, when viewed from the pilot's seat, wear in the gear is negligible.

The internal gear is bolted to the hub, the latter incorporating a gear which drives the timing gears. The combined piece formed by the internal gear and the hub is splined on to the front end of the crankshaft, where it is secured by a split brass cone and an externally serrated nut held by a serrated lock ring, which is fixed by a circlip. The outer race for the air screw and satellite rear roller bearing is held in the hub by a spring rim. The hub passes through the timing case, a distance piece being fitted between the hub gear and the brass bush in the centre of the timing case.

The air-screw shaft, which runs on a ball bearing in the front cover and a roller bearing in the hub, is machined in the sun gear fits. It also houses the front portion, outer race and balls of the front bearing, this bearing being secured by a cover plate which prevents the outer race from creeping, and is positioned by a number of nuts and bolts passing through the cover and cover plate. When these nuts are removed, the bolts cannot fall into the gear case, because they are located in it by small circlips.

The front cover is secured on the air-screw shaft by the air-screw shaft lock nut. This is followed up by a split taper sleeve which is secured by the air-screw boss. The front end of the hollow air-screw shaft is sealed by an aluminium plug which is pegged in position. A coil spring fits inside the shaft and bears against the front end nut locking sleeve, which is secured by a small circlip and positioned by two keys engaging with slots in the air-screw shaft. The front end nut screws on to the air-screw shaft, over the locking sleeve, and forces a split taper sleeve against the face of the propeller boss. While this nut is being screwed up the front end nut locking sleeve is pressed against the spring so as to free it from the front end nut. When the latter is tight the locking sleeve is released.



Power Curves of the Siddeley "Jaguar" fitted with the new reduction gear taken during the 100-hrs. type test.

As previously stated, the new geared "Jaguar" has successfully passed its 100 hours' type test, the following particulars of which may be of interest.

The engine was a standard "Jaguar" fitted with the reduction gear just described and an AVT. 70E. carburettor fitted at the rear and supplied with mixture through an oil jacketed heater box and a rear cover, where it is mixed by a fan keyed to the crankshaft. The fan carried the induction pipes, each of which served one front and one rear cylinder, a system which, the report states, ensures a very satisfactory distribution. Two B.T.H. S.V. 14A magnetos, K.L.G. F.15 plugs and braided high-tension cables were used.

The hundred hours' official type test, high speed and high-power tests, included a 50-hour run on a Heenan and Froude hydraulic brake and 50 hours on a calibrated airscrew.

Compression ratio, 5 to 1; gear ratio, 0·657 to 1; fuel consumption, 0·587 pts./B.H.P./hour over 49 hours.

(*a*) Preliminary power curve. Bar, 755 mm. Air intake temperature, 9° C.

Crankshaft R.P.M.	Recorded B.H.P.	Corrected B.H.P.	Oil Temp. (°C.) Inlet	Outlet
2035	458	461	55	58
1950	447	450	52	56
1850	434	437	49	57
1750	417	419·5	49	56
1650	396	398·5	48	56
1550	370	372·5	47	57
1450	343	345	47	55

(*b*) Slow-running test. Engine ran satisfactory for 10 minutes at 370 r.p.m.

(*c*) Acceleration test. The engine was accelerated rapidly from 370 r.p.m. to normal speed.

The average time taken to attain normal speed was 4 secs. Three accelerations were satisfactorily completed.

(*d*) Final power curve. Bar, 751 mm. Air intake temperature, 13° C.

Crankshaft r.p.m.	Recorded B.H.P.	Corrected B.H.P.	Oil Temp. (°C.) Inlet	Outlet
2035	453·7	458	49	58
1950	441	446·5	50	57
1850	427·2	433	50	55
1750	408	414	50	51
1650	387	391·5	50	50
1550	362·1	367	49	49
1450	338	342·5	49	49

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Another Atlantic Attempt

STILL they come. Another Atlantic flight, this time from East to West, started on July 22, when Lieut. Paris set out from Brest at 5 p.m. for the Azores in a Cams 54-G.R. Flying-boat, "La Frégate," accompanied by a mechanic and wireless operator. He arrived at Horta early the following morning, after a flight of 14 hrs. 25 mins. He did not land immediately, as it was still dark, but circled around for a short time until it was lighter before alighting. Fuel was immediately taken on board from a French despatch vessel, so that the flight could be resumed at the earliest possible moment. Throughout the flight to Horta, "La Frégate" was in constant wireless communication with various land stations and vessels.

The Simmonds "Spartan"

MR. O. E. SIMMONDS desires us to announce that he has severed his connection with the Supermarine Aviation Works, and that in future all communications with reference to the "Spartan" and the "Simmonds Interchangeable Wings" should be addressed to him at "Holmfels," Woolston, Hants. Telephone: Woolston 176. The "Spartan," it will be recalled, has wings so designed that any one spar can be used on port or starboard side, and as top or bottom plane. A similar interchangeability is effected in the case of elevators and rudder, so that the number of spares which it is necessary to stock is very small.

A New Koolhoven Machine

REFERENCE is made in the report of the Rotterdam Meeting to a new machine designed and built by our old friend, Fred. Koolhoven. This is known as the F.K.41, and is a three-seater cabin monoplane, with the pilot in front and two passengers behind him, side by side. We understand there is a possibility of an English firm acquiring the British rights for this machine which, although not quite in the light 'plane class, should be a very useful and economical touring 'bus. A later edition is to be fitted with the A.D.C. "Cirrus II" engine.

Mr. Pander Joins the Pilots

IT is probably not generally known in this country that Mr. H. Pander, jun., has obtained his pilot's licence, and is already a very accomplished pilot, as his flying at Waalhaven showed. Mr. Pander is, of course, the constructor of the very fine little Pander sesquiplanes, but at present these are not in production in the ordinary way, but only built to order. The main business of Pander & Zoonen is furniture making, in which line they are the most prominent firm in Holland.

The Prince of Wales Flies to Lincolnshire

THE Prince of Wales has fulfilled another of his appointments by air, when, on July 18, he flew in his Bristol Fighter, piloted by Flt. Lieut. Don, from Northolt to Northcote Aerodrome *en route* for Brocklesby Park (where he was the guest of Lord Yarborough) and Grimsby.

Those Persian Air Routes

IT is stated that negotiations for an air agreement between Great Britain and Persia regarding air routes are proceeding, and that it is proposed to construct five aerodromes in Southern Persia for the use of Imperial Airways, linking Baghdad and Karachi with the existing air mail route from Teheran.

More U.S. Seaplane Records?

DURING a flight at Philadelphia, on July 11-12, one of the U.S. Navy PN-type twin flying boats established, it is claimed, six new records in the load-carrying seaplane class—2,000 kg., 16 hr. 39 min. 52 sec.; covered 2,150 km.; averaged 83 m.p.h. for the 2,000 km. in the 500, 1,000, and 2,000-kg. categories; and 2,150 km. with a load of 1,000 kg. (distance).

M. Lowenstein's Body Found

A BOULOGNE fishing boat found the body of M. Lowenstein—who fell from his aeroplane when crossing the Channel on July 4—floating in the water 10 miles off Cape Gris Nez, and brought it back into port on July 19. The body, which was clothed only in underclothing, was identified by a wrist watch

THE "JUPITER" AND NOBILE'S RESCUER: Our picture shows Lieut. Lundborg, of the Swedish Army (right), with his mechanic and a Fokker C.V. fitted with a Bristol "Jupiter" engine. It was Lieut. Lundborg who rescued Gen. Nobile, as previously recorded in "Flight," and who was himself stranded with the remaining members of the Italia's crew when he damaged his machine on landing after his second rescue trip

An African Airways Failure

OWING to lack of public support, it is reported, African Airways, Ltd., which was being organised to operate a Rand-Durban mail and passenger service, has had to abandon any further activities. All capital and subscriptions are being returned.

Croydon Aerodrome Hotel Opened

ON July 20, Sir Samuel Hoare, Secretary of State for Air, opened the new hotel at Croydon Aerodrome.

Air Survey

THE Topographical Survey Branch of the Canadian Department of the Interior propose to map 100,000 square miles of Northern Canada this summer. Eighteen aeroplanes will carry out the survey.

Canadian Award for Meritorious Air Service

THE first annual award (for 1927) of the McKee Trophy for "meritorious service in aviation" has been made to Capt. H. A. Oaks, of the Northern Aerial Minerals Exploration, Ltd., and formerly connected with Western Canada Airways. In presenting the trophy, Col. the Hon. J. H. Ralston, Minister of National Defence, drew attention to the record of Capt. Oaks, who had served in the Royal Air Force, and particularly to what he had done in developing aviation in Western Canada, in organising efficient flying services in northern Ontario, Manitoba, and Saskatchewan. It was largely due to his energy that the transport of men and supplies to the outlying mining camps was now on an established footing. He was also responsible for the organisation of transporting the drilling machinery and crew required by the Department of Railways and Canals at Fort Churchill, in the depth of winter and over territory wholly unorganised for flying. The McKee Trophy was donated by the late Mr. J. D. McKee, the Pittsburgh millionaire aviation enthusiast, who, with Sqd.-Ldr. Godfrey, made the first trans-Canada flight in 1926, and it was while preparing for a flight from Montreal to the Arctic Ocean that Mr. McKee met an untimely end last summer in a crash in the Laurenticus.

Twenty Years Ago!

Extract from "The Auto." (Precursor of "Flight"), July 25, 1908.

"*The Ferber Aeroplane.*—Capt. Ferber's new aeroplane has now been brought out for trial, and the results obtained with it will be watched with especial interest, for there is no one in France who has devoted more continuous study to the problem than has Capt. Ferber, whose practical interest in aviation extends back many years. The new aeroplane is a double-deck machine built on a bamboo framework, and has provision for warping the wings, as in the Wright aeroplane. There is in addition a deflector plane for varying the height, and a vertical rudder for steering. Propulsion is effected by means of a 50-h.p. Antoinette engine."

BELGIAN RECORD WITH ENGLISH ENGINE: This is Adjutant Crooy and Sgt. Groenen in their D.H.9 fitted with the Armstrong-Siddeley "Puma" engine (supplied by A.D.C. Aircraft, Ltd.), making their recent duration record of 60 hours 7 mins. 32 secs. The other picture shows the machine being refuelled during the flight.

THIS year's air race, on July 20-21, for the King's Cup (the seventh)—in which was included a new competition, the Siddeley Trophy Tour—took the form of a handicap race round Britain. It was not, therefore, a particularly spectacular affair except (thanks to the excellent handicapping of Capts. Goodman Crouch and Dancy) for those gathered together at the concluding stages, Renfrew and Brooklands—and perhaps Newcastle (first day). For the armchair aviation enthusiast, who enjoys studying a table of figures and working out handicap times, flying times, speeds, etc., the race presented much of interest, however. We do not mean to infer that the race was not a success, for it undoubtedly was, marred only by one unfortunate incident, resulting in the death of one of the competitors, Mr. G. N. Warwick, who crashed into Broadlaw Hill near Peebles during his flight from Newcastle to Renfrew. Of this, more anon.

The 1928 King's was Cup Race was flown over two days, the first day's course being made up of the following stages :—

Hendon to Mousehold Aerodrome, Norwich, 99 miles; Castle Bromwich, Birmingham, 132 miles; Hucknall Aerodrome, Nottingham, 43½ miles; Sherburn-in-Elmet Aerodrome, Leeds, 51¼ miles; Cramlington Aerodrome, Newcastle, 94 miles; and Renfrew, Glasgow, 121 miles—a total for Section 1 of 540¾ miles.

Each competitor had to stop at each of the intermediate controls for 30 minutes, staying the night at Renfrew. On the following morning, they proceeded from Renfrew, starting according to their handicap for the second section, plus or minus the times gained or lost over the first section, to Brooklands Aerodrome via the following controls :—Hooton Park, Liverpool, 189¾ miles (turning points at Silloth, 79½ miles, and Blackpool Tower, 74¼ miles); Filton Aerodrome, Bristol, 124½ miles; Hamble Aerodrome, Southampton, 71 miles; Lympne, 103¼ miles; finishing at Brooklands, 67¼ miles—a total for Section 2 of 555¾ miles, or altogether, for the two sections, 1,096½ miles.

The race produced a splendid entry of 38 machines—which included 14 entries for the Siddeley Trophy, presented by Mr. J. D. Siddeley; a Challenge Cup for competition amongst the Light Aeroplane Clubs, and flown this year simultaneously with the King's Cup Race. Of these 38, 36 started from Hendon, and 24 completed the first section. Only one of these 24, all of which started on the second section, failed (and only just failed) to reach Brooklands.

["FLIGHT" *Photograph*

THE KING'S CUP WINNER AND HIS WINNING SMILE: Capt. W. L. Hope with the Cup (won for the second time), his mother (left), and his wife (right).

Once again, the light aeroplane showed up remarkably well, the de Havilland "Moth" family being particularly strong—out of the 38 entries, 14 consisted of this breed, 13 of which started and 9 finished. The new D.H. "Gipsy" engine (fitted in three of the "Moths") also made its début, and showed up remarkably well.

Now as to the results. For the second time in succession, the King's Cup was won by Capt. W. L. Hope, in his own D.H. "Moth," 'YZ, fitted with the new 85 h.p. D.H. "Gipsy" engine. He completed the full course in 10 hrs. 24 mins. 4 secs., flying time, at an average speed of 105½ m.p.h. He also won £200 presented by Sir Charles C. Wakefield.

C. F. Uwins, piloting a Bristol 101 (490 h.p. Bristol "Jupiter VIA") entered by Sir George Stanley White, was second, with a flying time of 7 hrs. 43 mins. 11 secs., and an average speed of 142 m.p.h. He won £50 presented by Sir Charles Wakefield and £50 presented by Mr. Vernon Bellhouse.

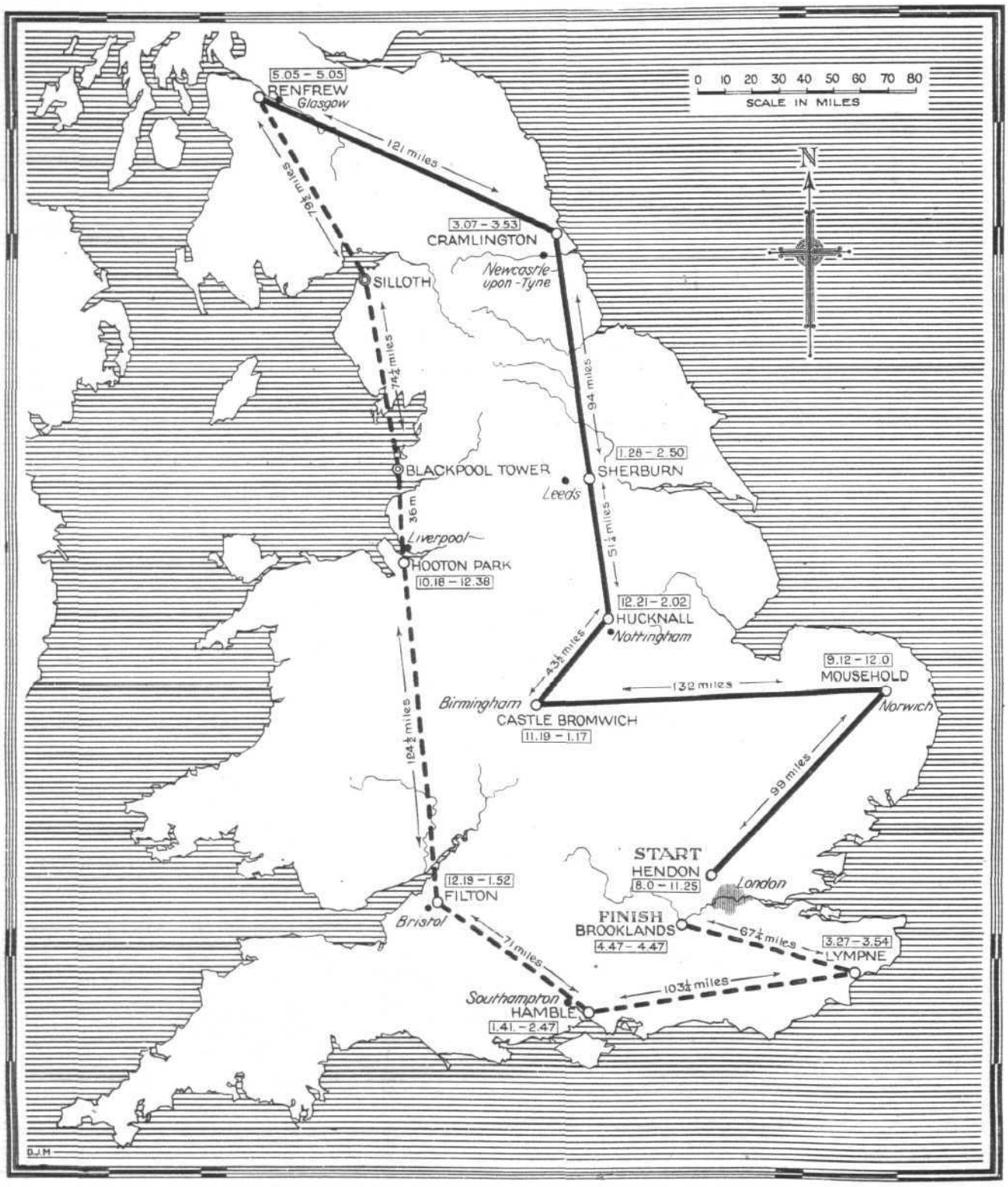
Third place went to Miss Winifred Spooner—the only woman pilot in the race—flying her D.H. "Moth," 'OT ("Cirrus I"), who conpleted the course in 13 hrs 9 mins. 15 secs., at an average speed of 83½ m.p.h. Hers was a magnificent effort, on both days, for it was only on the last leg of Section 1 that she lost the lead, and similarly on Section

2 she was leading until the last leg from Lympne to Brooklands, when she was overhauled by Hope. In addition to the third prize of £50, presented by the Blackpool Tower Co. Ltd., Miss Spooner also won the Siddeley Challenge Cup and prize of £150.

Other awards went as follows:—Special Prize of £100, presented by Mr. A. S. Butler, for the fastest time round the course, to Flying-Officer J. Summers on the Avro "Avenger" (Napier "Lion") entered by Mr. A. V. Roe. The "Outram"

particulars, handicaps, starting times, and times of arrival at the various controls of all the competitors. It only remains, therefore, for us to give a brief résumé of the race, stage by stage, dealing with the main incidents from start to finish.

The Start.—Only comparatively few people turned up at Hendon Aerodrome to see the start, although the number increased by 10 a.m. The weather was fine, and weather reports from various points along the course were, on the



THE KING'S CUP AIR RACE AND SIDDELEY TROPHY TOUR: Map showing the course, with mileages between controls, which competitors in both events followed on July 20-21. The figures in frames indicate the times at which the limit and scratch competitors respectively started from Hendon and were scheduled to arrive at the various controls and finishing point (Brooklands).

Trophy, presented by the "Glasgow Evening Times," for the first machine to reach Renfrew, to Flying-Officer L. R. Atcherley, flying the Gloster "Grebe" (385 h.p. Armstrong-Siddeley "Jaguar") entered by the Right Hon. Sir William Joynson-Hicks. The Glasgow Corporation Trophy for the first light 'plane to reach Renfrew, to Capt. W. L. Hope.

The general progress of the race may be followed by examining our table of results, which gives the leading

whole, favourable. Punctually at 8 a.m. Mr. George Reynolds, despatched the first two competitors off together—H. M. Yeatman and E. E. Stammers, both on Cirrus I-Moths. M. A. Lacayo, on a similar machine, was scheduled to start next, but this competitor was the only absentee, so at 8.9 a.m. another pair were sent off—Flt.-Lt. Le Poer Trench on the H.A.C. II (Bristol Cherub) and Miss Winifred Spooner on her "Moth," the latter getting away very smartly.

Some nine minutes later F./O. L. S. Birt was sent away on the Blackburn Bluebird (Siddeley " Genet "), followed shortly after by two machines of special interest. The first of these was the good old Avro " Baby " G-EAUM, now fitted with a Cirrus engine, piloted by R. A. Whitehead, and the other was the Simmonds " Spartan " (" Cirrus II "), the latest arrival in the light 'plane world, piloted by Flt.-Lt. S. N. Webster, of Schneider Trophy fame. The " Spartan " is a business-like looking biplane, of which more may be heard in the near future.

ing overtime. It continued thus over the aerodrome back towards the starting line, and then, turning into the wind, the pilot opened out and up it went in fine style, banking round into the course for Norwich as smartly as any of the other machines. It would seem that it is only a matter of evolving some means of quickly reviving up the windmill and the Autogiro would take off as speedily as the ordinary type of machine.

After this three more batches of machines went away at short intervals, viz. :—A " Moth " and an " Avian " (L. G.

[" FLIGHT " *Photographs*

THE FINISH OF THE KING'S CUP AIR RACE : Capt. W. L. Hope " crossing the line " at Brooklands (top) on his D.H. " Moth " (D.H. " Gipsy "), and, below, being chaired by enthusiastic supporters.

The somewhat monotonous dispatching of machines was then enlivened by the departure of the Autogiro—or " Windmill " 'plane—piloted by A. C. H. A. Rawson. After its Armstrong-Siddeley " Lynx " engine had been started up, its passenger put in his early morning physical exercises in setting the windmill in motion. Then Reynolds lowered his flag, and C.8 L.2 proceeded majestically across the aerodrome, at the far end of which it made a wide circle to the right, gathering speed the meanwhile and, almost completely hidden from view owing to the " dip " in the ground at that end, looking for all the world like a threshing machine work-

Richardson and J. C. Cantrill) ; two " Moth X's " and an " Avian " (Capt G. de Havilland, S. W. Smith and B. Martin) ; and another " Moth X " and another " Avian " (Norman Jones and C. B. Wilson).

A Genet " Moth " (F. O. Soden) and another Cirrus " Moth X " (A. C. Jackaman) having fluttered away separately, a pair of " Avians," piloted respectively by G. E. F. Boyes and E. W. Percival, departed, followed by Neville Stack on yet another " Moth " (Cirrus III). Then came a trio, consisting of two Westland " Widgeons " (Col. the Master of Sempill and R. G. Cazalet) and an " Avian " (R. L. Ragg).

KING'S CUP RACE AND SIDDELEY TROPHY TOUR RESULTS.

(Siddeley Trophy Competitors marked thus *.)

FIRST DAY, JULY 20. SECTION 1. 540¾ miles.

No. and Ident. Mark.	Machine.	Engine.	Entrant.	Pilot.	Handicap (1st stage)	Start Hendon	Norwich (99 miles) arr.	Birmingham (132 miles) arr.	Nottingham (43½ miles) arr.	Leeds (51½ miles) arr.	Newcastle (94 miles) arr.	Glasgow (121 miles) arr.	Order of Finish
					h. m. s.	h. m. s.	h. m. s.	h. m. s.	h. m. s.	h. m. s.	h. m. s.	h. m. s.	
*30 ('VD)	D.H. Moth	60 Cirrus I	H. M. Yeatman	H. M. Yeatman	3 23 21	8 0 0	9 9 5	11 37 38	12 40 27		15 38 23	Retired	
*38 ('MF)	D.H. Moth	60 Cirrus I	C. B. Wilson	E. E Stammers	3 23 21	8 0 0	9 11 56	11 46 22	Retired				
25 —	D.H. Moth	60 Cirrus I	M. A. Lacayo	M. A. Lacayo	3 18 42	8 4 9	Non-starter						
*4 ('OO)	H.A.C. II	31 Cherub III	C. D. Breese	Le Poer Trench	3 14 9	8 9 12	9 20 1	13 6 11	Retired				
*37 ('OT)	D.H Moth	60 Cirrus I	Miss W. E. Spooner	Miss W. E. Spooner	3 14 9	8 9 12	9 12 33	11 33 37	12 32 16	13 41 19	15 18 45	17 47 54	
*28 ('SZ)	Blackburn Bluebird	80 A-Siddeley Genet II	R. L. Preston	L. S. Birt	3 5 23	8 17 58	9 26 7	11 55 30	Retired				10
*16 ('AUM)	Avro Baby	60 Cirrus I	R. A. Whitehead	R. A. Whitehead	2 52 57	8 30 24	Down St. Edmonds						
27 ('YU)	Simmonds Spartan	75 Cirrus II	O. E. Simmonds	S. N. Webster	2 48 59	8 34 22	9 43 31	12 13 24	13 12 3	14 27 30	15 58 42	18 27 48	
3 ('YY)	Autogiro C.8 L.2	180 A-Siddeley Lynx	J. G. Weir	A. C. H. A. Rawson	2 41 19	8 42 2	9 47 3	Retired					21
*2 ('PQ)	D.H. Moth	75 Cirrus II	L. G. Richardson	L. G. Richardson	2 30 25	8 52 56	9 55 52	12 6 25	13 12 5	14 20 55	15 55 56	18 18 49	
10 ('YP)	Avro Avian IIIA	75 Cirrus II	J. Parkinson	J. C. Cantrill	2 30 25	8 52 56	9 55 40	12 43 7	13 41 34		16 24 29	18 26 28	17
12 ('UX)	D.H. Moth X	75 Cirrus II	A. S. Butler	G. de Havilland	2 26 56	8 56 25	9 54 50	11 59 42	12 56 48	14 4 6	15 36 49	17 50 5	22
15 ('YV)	D.H. Moth X	75 Cirrus II	A. A. Nathan	S. W. Smith	2 26 56	8 56 25	10 6 37	12 37 33	Retired				13
22 ('XJ)	Avro Avian	75 Cirrus II	H. J. V. Ashworth	B. Martin	2 26 56	8 56 25	9 55 43	12 0 5	12 59 17		15 39 44	17 52 48	
*8 ('WI)	D.H. Moth X	75 Cirrus II	Norman Jones	Norman Jones	2 20 11	9 3 10	10 2 41	12 8 10	13 4 38	14 11 16	15 43 2	17 57 8	14
34 ('YR)	Avro Avian	75 Cirrus II	A. V. Roe	C. B. Wilson	2 20 11	9 3 10	10 5 46	12 15 46	13 13 38	*	15 55 43	18 19 19	15
*9 ('OU)	D.H Moth	65 A-Siddeley Genet	F. O. Soden	F. O. Soden	2 16 54	9 6 27	10 9 33	12 18 59	13 16 18		15 55 26	Retired	18
*11 ('RT)	D.H. Moth X	75 Cirrus II	A. C. M. Jackaman	A. C. M Jackaman	2 13 41	9 9 40	10 8 18	12 10 31	13 9 10	14 13 20	15 42 17	17 51 12	
31 ('ZD)	Avro Avian III	80 A-Siddeley Genet	W. Newton	G. E. F. Boyes	2 10 32	9 12 49	10 12 37	12 15 30	Retired				11
33 ('YO)	Avro Avian	85 Cirrus III	Lady Wakefield	E. W. Percival	2 10 32	9 12 49	10 22 4	13 32 47	14 32 2	15 37 54	17 12 55	19 31 52	
35 ('UF)	D.H. Moth	85 Cirrus III	M. O. Darby	T. Neville Stack	2 7 27	9 15 54	10 11 59	12 9 23	13 4 48	14 8 5	15 35 22	17 41 36	24
14 ('RO)	Westland Widgeon	75 Cirrus II	R. A. Bruce	Master of Sempill	2 4 25	9 18 56	10 18 28	12 27 52	13 24 0	14 54 55	16 28 40	19 0 18	7
*17 ('QN)	Avro Avian	75 Cirrus II	P. N. G. Peters	R. L. Ragg	2 4 25	9 18 56	10 18 16	Retired.					23
*29 ('RM)	Westland Widgeon	75 Cirrus II	R. G. Cazalet	R. G. Cazalet	2 4 25	9 18 56	10 18 57	12 26 39	13 23 32		16 45 0	18 27 7	
24 ('PI)	Anec IV	80 A-Siddeley Genet II	G. N. Warwick	G. N. Warwick	2 1 27	9 21 54	11 42 40	13 36 4	14 31 38		17 0 8	Crashed.	20
7 ('YZ)	D.H. Moth G	85 D.H. Gipsy	W. L. Hope	W. L. Hope	1 55 40	9 27 41	10 20 26	12 11 27	13 4 13	14 5 15	15 28 45	17 27 59	
18 ('TE)	Parnall Imp.	80 A-Siddeley Genet II	G. G. Parnall	D. W. Bonham-Carter	1 52 52	9 30 29	10 24 48	12 18 24	13 12 48	14 15 5	15 40 24	17 46 1	3
*13 ('RQ)	Westland Widgeon III	80 A-Siddeley Genet II	"Harold Brooklyn"	"Harold Brooklyn"	1 44 45	9 38 36	10 34 29	12 33 21	13 29 42	14 33 26	16 1 30	18 10 39	8
6 ('YK)	D.H. Moth G.	85 D.H. Gipsy	Sir Chas. Wakefield	H. S. Broad	1 34 35	9 48 46	10 38 37	12 24 39	13 16 49	14 16 49	15 37 40	17 29 53	16
1 ('TO)	S.E. 5A	120 Airdisco	Will Hay	F. R. Mathews	1 32 9	9 51 12	10 43 16	12 34 22	13 45 18	15 1 15	16 23 2	18 21 37	2
*5 ('QH)	D.H. Moth G.	85 D.H. Gipsy	A. S. Butler	A. S. Butler	1 25 6	9 58 15	10 48 59	12 35 32	13 27 18	14 27 2	15 47 41	17 28 54	19
20 ('YT)	Bristol 83E	210 Bristol Titan I	H. J. Thomas	A. G. Jones-Williams	56 24	10 26 57	11 14 51	12 54 52	13 45 34	14 42 46	15 59 23	17 44 58	6
36 ('OJ)	Nimbus Martynside	300 A.D.C. Nimbus	J. Barrett-Lennard	H. W. G. Jones	44 12	10 39 9	11 21 35	12 54 49	Retired.				5
23 (—)	Gloster Grebe	385 A-Siddeley Jaguar	Sir W. Joynson-Hicks	R. L. R. Atcherley	40 56	10 42 25	11 22 40	12 50 39	13 36 52	14 29 34	15 38 49	17 19 27	
21 ('OW)	Bristol 101	490 Bristol Jupiter VIA	Sir G. Stanley White	C. F. Uwins	34 21	10 48 40	11 51 17	13 16 23	14 4 50	14 56 39	16 4 0	17 34 12	1
26 ('VA)	Blackburn Lincock	180 A-Siddeley Lynx	R. Blackburn	J. Noakes	34 21	10 48 40	11 31 38	13 2 39	13 50 26	14 44 24	15 55 37	17 46 1	4
19 ('YC)	Hawker Heron	490 Bristol Jupiter VI	T. O. M. Sopwith	P. W. S. Bulman	27 19	10 56 2	Non-starter.						8
32 ('ND)	Avro Avenger	550 Napier Lion IX	A. V. Roe	J. Summers	Scratch	11 23 21	11 59 16	13 42 40	14 28 23	15 21 30	16 26 59	17 48 20	11

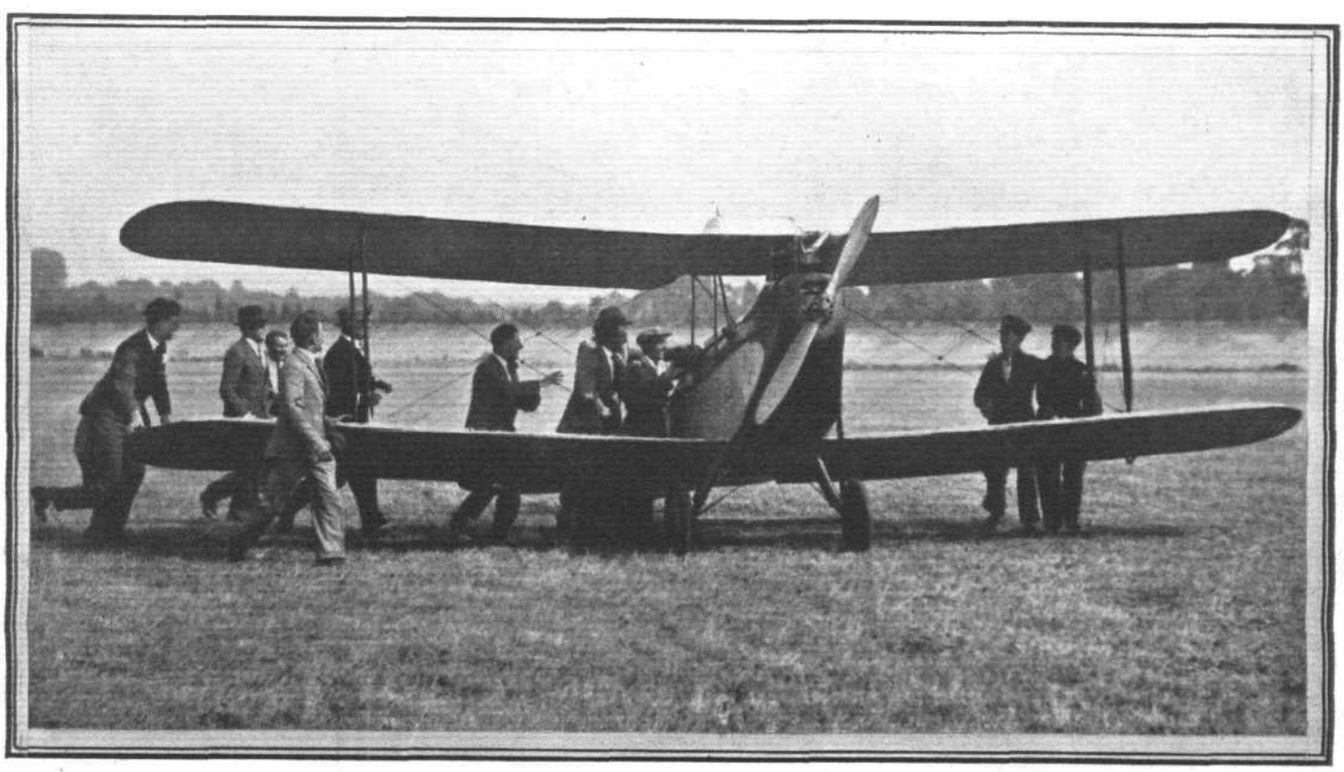
SECOND DAY, JULY 21. SECTION 2. 555¾ miles.

No. and Ident. Mark.	Machine.	Engine.	Entrant.	Pilot.	Handicap. (2nd stage)	Start. Glasgow.	Liverpool. arr.	Bristol. arr.	Hamble. arr.	Lympne. arr.	Brooklands. arr.	Position. King's Cup.	Position. Siddeley Trophy.
					h. m. s.	h. m. s.	h. m. s.	h. m. s.	h. m. s.	h. m. s.	h. m. s.		
*37 ('OT)	D.H. Moth	60 Cirrus I	Miss W. E. Spooner	Miss W. E. Spooner	3 19 33	8 0 0	10 12 6	11 55 2	13 6 53	14 44 0	16 0 33	3	1
12 ('UX)	D.H. Moth	75 Cirrus II	A. S. Butler	G. de Havilland	3 31 1	8 50 43	10 42 45	12 20 54	13 30 26	15 2 54	16 15 57	5	/
22 ('XJ)	Avro Avian	75 Cirrus II	H. J. V. Ashworth	B. Martin	3 31 1	8 53 26	11 10 45	—	—	—	17 51 30	20	/
7 ('YZ)	D.H. Moth G	85 D.H. Gipsy	W. L. Hope	W. L. Hope	1 58 53	9 0 45	10 40 30	12 11 57	13 17 25	14 43 1	15 55 11	1	/
35 ('UF)	D H Moth	85 Cirrus III	M O Darby	T Neville Stack	2 10 59	9 2 16	11 14 54	12 48 47	13 55 38	15 23 22	16 33 11	11	/
*11 ('RT)	D H. Moth X	75 Cirrus II	A C M Jackaman	A. C. M. Jackaman	2 17 24	9 3 58	10 58 12	12 29 39	13 38 31	15 8 19	16 19 54	7	/
*8 ('WI)	D H. Moth X	75 Cirrus II	Norman Jones	Norman Jones	2 24 4	9 4 43	10 59 29	12 32 56	13 42 17	15 13 55	16 26 41	9	/
27 ('YU)	Simmonds Spartan	75 Cirrus II	O. E. Simmonds	S. N. Webster	2 53 41	9 5 46	11 26 18	13 12 25	14 25 49	16 8 10	17 27 55	18	/
*2 ('PQ)	D.H. Moth	75 Cirrus II	L. G. Richardson	L. G. Richardson	2 34 36	9 15 52	11 5 15	12 47 23	13 57 50	15 31 41	16 45 10	12	/
18 ('TE)	Parnall Imp	80 A-Siddeley Genet II	G. G. Parnall	D. W. Bonham-Carter	1 56 0	9 21 40	10 58 4	12 37 8	13 45 33	15 14 32	16 25 1	8	/
6 ('YK)	D.H. Moth G	85 D.H. Gipsy	Sir Chas. Wakefield	H. S. Broad	1 37 12	9 24 20	11 0 34	12 27 51	13 32 17	14 56 10	16 2 41	4	/
34 ('YR)	Avro Avian	75 Cirrus II	A. V. Roe	C. B. Wilson	2 24 4	9 26 54	11 50 6	—	—	17 27 4	18 18 0	21	/
*5 ('QH)	D.H. Moth G	85 D.H. Gipsy	A. S. Butler	A. S. Butler	1 27 28	9 43 5	11 16 2	12 44 9	13 47 34	15 9 17	16 16 16	6	/
*29 ('RM)	Westland Widgeon	75 Cirrus II	R. G. Cazalet	R. G. Cazalet	2 7 53	9 50 53	11 46 30	—	—	16 11 2	17 26 50	17	/
10 ('YP)	Avro Avian IIIA	75 Cirrus II	J. Parkinson	J. C. Cantrill	2 34 36	9 53 31	11 56 30	—	—	Down Crowbrough.		—	/
*13 ('RQ)	Westland Widgeon III	80 A-Siddeley Genet II	"Harold Brooklyn"	"Harold Brooklyn"	1 47 39	9 54 39	11 42 11	13 17 36	14 25 19	15 56 53	17 8 10	15	/
23 (——)	Gloster Grebe	385 A-Siddeley Jaguar	Sir W. Joynson-Hicks	R. L. R. Atcherley	0 42 4	9 59 2	11 11 26	14 19 35	15 22 15	16 33 24	17 32 6	19	/
1 ('TO)	SE 5A	120 Airdisco	Will Hay	F. R. Mathews	1 34 42	10 18 34	12 8 42	13 39 2	14 43 18	16 5 26	17 12 39	16	/
20 ('YT)	Bristol 83E	210 Bristol Titan I	H. J. Thomas	A. G. Jones-Williams	57 58	10 18 39	11 58 36	13 22 22	14 25 8	15 44 52	16 48 40	14	/
14 ('RO)	Westland Widgeon	75 Cirrus II	R. A. Bruce	Master of Sempill	2 7 53	10 24 4	12 31 45	14 16 22	15 31 2	17 6 47	18 24 0	22	/
21 ('OW)	Bristol 101	490 Bristol Jupiter VIA	Sir G. Stanley-White	C. F. Uwins	35 37	10 30 14	11 41 11	12 55 41	13 51 42	15 1 34	15 58 53	2	/
26 ('VA)	Blackburn Lincock	180 A-Siddeley Lynx	R. Blackburn	J. Noakes	35 37	10 42 3	12 1 9	13 19 33	14 18 35	15 31 18	16 31 10	10	/
33 ('YO)	Avro Avian	85 Cirrus III	Lady Wakefield	E. W. Percival	2 14 10	10 49 21	12 48 9	14 25 6	15 31 50	17 1 21	18 44 4	23	/
32((ND)	Avro Avenger	550 Napier Lion	A. V. Roe	J. Summers	Scratch	11 19 59	12 31 3	13 43 42	14 38 19	15 44 16	16 46 14	13	/

["FLIGHT" *Photograph*

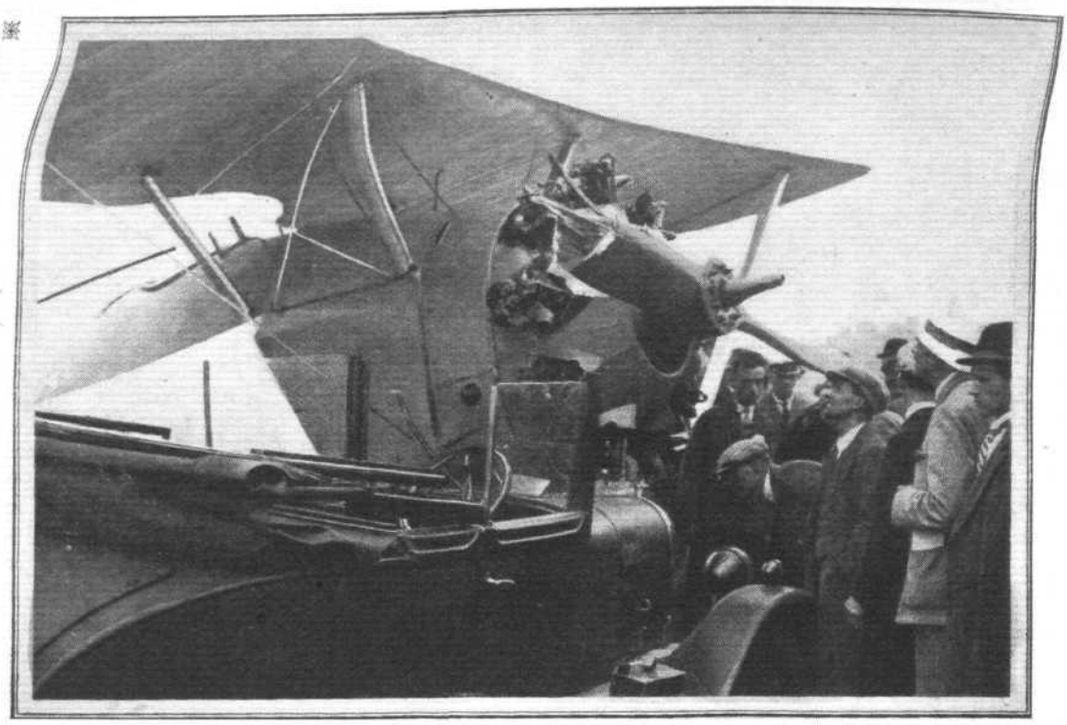
SECOND—AND NEARLY FIRST!: C. F. Uwins on the Bristol 101 coming in second at Brooklands. But for compass trouble he might have overhauled Hope.

Then at varying intervals ten more machines of various breeds, including some of the faster 'buses (see table), got away singly, and we came to the final high-speed merchants. A pair of these, the Bristol 101 ("Jupiter"), C. F. Uwins up, and the Blackburn "Lincock" (Armstrong-Siddeley "Lynx IV"), piloted by Sq.-Ldr. J. Noakes, were sent off together. Next to go was Flt.-Lt. Bulman on the Hawker "Heron" (Bristol "Jupiter VI"), but unfortunately, whilst taxying up to the starting line, the "Heron" ran full tilt into a car standing out on the 'drome (why, we cannot understand), with serious results to the "Heron's" airscrew and leading edge (and the car). As he was due to leave in a few minutes, Bulman was, of course, put out of the race, a bit of real hard luck, as the "Heron" was a strong



["FLIGHT" *Photograph*

THIRD AND FIRST: Miss W. E. Spooner lands safely at Brooklands in her D.H. "Moth" ("Cirrus I") after a plucky fight for first place in the King's Cup race. She was placed third in this, and won also the Siddeley Trophy.



A King's Cup Non-Starter: The Hawker "Heron" (pilot, Flight-Lieut. P. W. Bulman), which was one of the favourites, had the misfortune to run into a car while taxying to the starting line at Hendon, with the result shown. ["FLIGHT" *Photograph*

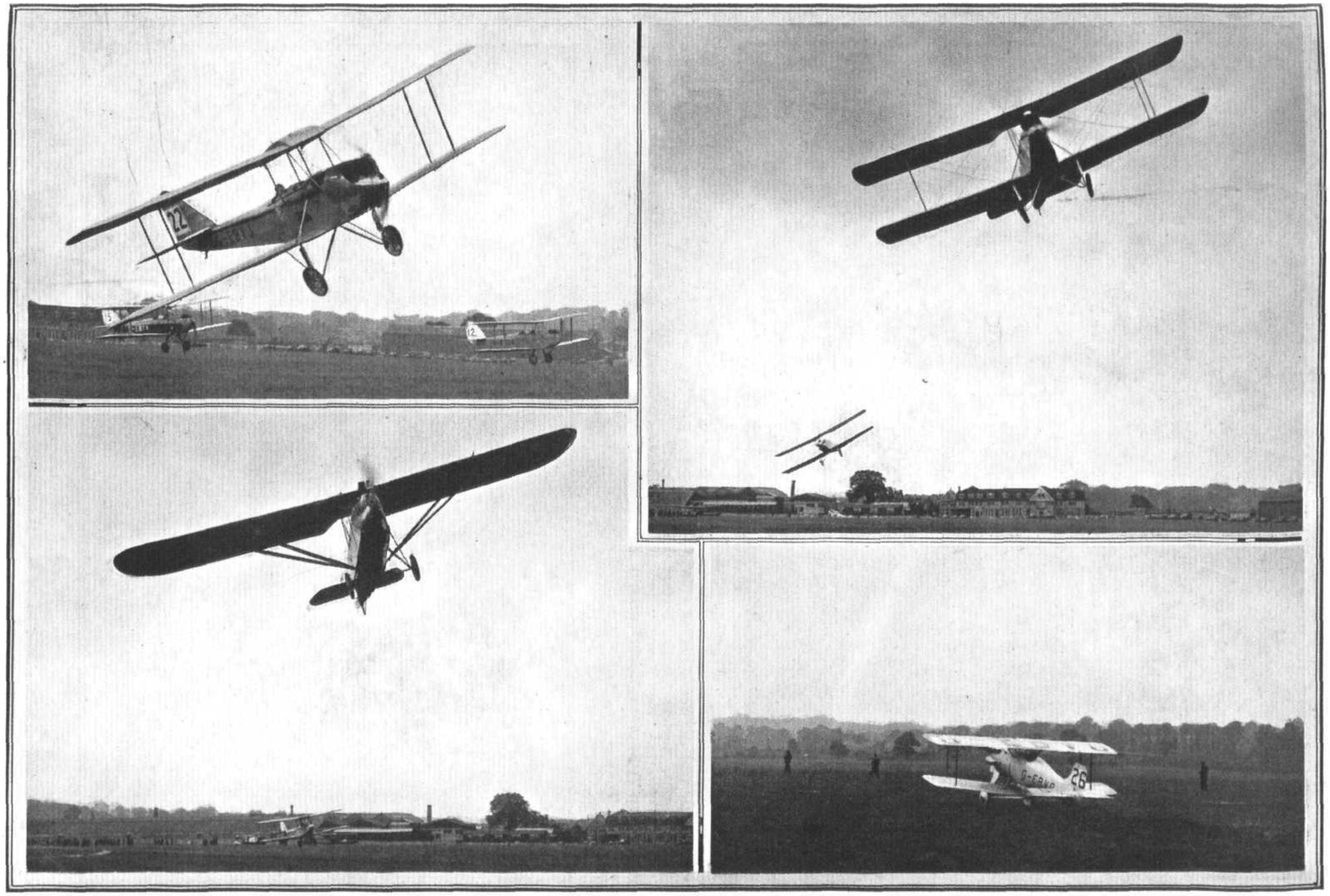
favourite. This left only the scratch man to go, F./O. J. Summers (in place of Flight-Lieut. Luxmore) on the Avro "Avenger" (Napier "Lion").

All competitors arrived at Norwich except R. A. Whitehead on the Avro "Baby," who made a forced landing near Bury St. Edmunds. He was unhurt, but his passenger was slightly injured.

During the next stage to Birmingham, two more machines

["FLIGHT" *Photographs*

THE KING'S CUP AIR RACE: First and last away from Hendon. At the top E. E. Stammers and H. M. Yeatman (No. 30) are first away in their D.H. "Moths" ("Cirrus I"), at 8 a.m. Below, Flying-Officer Joseph Summers, on the Avro "Avenger" (Napier "Lion") who started scratch at 11.23 a.m.



["FLIGHT" *Photographs*

THE KING'S CUP AND SIDDELEY TROPHY: Some competitors starting from Hendon on the first stage. Top, left: Bernard Martin on the Avro Avian (No. 22), Wing-Com. S. W. Smith on the D.H. Moth X (No. 15), and Capt. G. de Havilland on another Moth X, take off together. Right: C. E. F. Boyes (left) and E. W. Percival off together, both on Avians fitted respectively with Armstrong-Siddeley "Genet II" and A.D.C. "Cirrus III" engines. Bottom, left: R. G. Cazalet on a Widgeon III ("Cirrus II"), and just behind him Flight-Lieut. Ragg on an Avian ("Cirrus"). Right: Sqdn.-Ldr. J. Noakes gets away on the Blackburn "Lincock" (Armstrong-Siddeley "Lynx").

["FLIGHT" *Photograph*

FASTEST, IF NOT FIRST: Flying-Officer Joseph Summers, who won the special prize of £100 (presented by Mr. Alan S. Butler) for the fastest time over the course. Piloting the Avro "Avenger" (Napier "Lion") he averaged 149 m.p.h.

["FLIGHT" *Photograph*

AN OLD HENDONIAN: One of the visitors watching the King's Cup competitors get away from Hendon was Marcel Desoutter, whose splendid flying on the Bleriot at those wonderful early Hendon meetings always thrilled the spectators.

["FLIGHT" *Photograph*

THE KING'S CUP AIR RACE: An early scene at Hendon, July 20, just before "going over the top." Some of the first machines preparing for a start.

dropped out. The Autogiro had a forced landing near Nuneaton, and damaged its " windmill," but had otherwise made good time. The second machine was Ragg's Avian who crashed at Atterstone.

More retirements occurred on the Nottingham leg ; there were Stammers, Le Poer Trench, Birt (down near Minworth), while Smith and Boyes collided on the ground and damaged their machines, and H. W. G. Jones, who crashed while taking off at Birmingham.

This left 26 in the race, all of whom got safely to Leeds and Newcastle. An examination of our table will show that the arrivals at Newcastle were beginning to bunch together—there were matters of seconds only between many of the competitors, some even tied.

As was expected, therefore, the finish of section 1 was remarkably close, the first 10 arriving within half an hour of each other, and the remainder within about 1 hr. 44 mins. Miss Spooner, who had been leading up to Newcastle, was overhauled by nine other competitors, the first to arrive being Atcherley, on the Gloster " Grebe." The order of arrival of the others is shown in our table. Two failed to turn up at Renfrew—Soden, on the Genet-Moth, who had a forced landing near Glasgow, and Warwick, on the Anec IV.

The latter caused considerable anxiety, for no news of him was forthcoming until Monday morning, although an extensive search had been carried out during the two days, in which aeroplanes took a part. His body was subsequently found, by a shepherd boy, on the summit of Broadlaw Hill, near Peebles, with the wrecked Anec close by. The cause of his crash is at present unexplained. It is highly probable, however, that the pilot encountered mist or other trouble and endeavoured to land, and in doing so over-ran the level ground on the summit of the hill, and somersaulted down the slope, for the wreckage of the machine was scattered over a distance of some 200 yards.

Thus, at the end of Stage 1, 24 out of the 36 starters reached Renfrew, where they stayed the night and departed on the second stage early next morning. Miss Spooner's flying time for the day was 7 hrs. 8 mins. 42 secs. (75¾ m.p.h.), while Uwins took 4 hrs. 15 mins. 32 secs. (127 m.p.h.), and Hope 5 hrs. 29 mins. 38 secs. (99½ m.p.h.). Summers, on the "Avenger,' averaged 138 m.p.h. over Section 1.

The Finish.—All 24 of the previous day's arrivals set out from Renfrew on the 555¾ miles journey to Brooklands. Miss Spooner was the first away, and Summers was again Scratchman. This second section was carried through more or less without incident. The speeds were higher than on the previous day, and again the light 'planes made good progress.

The first to meet with serious trouble was Atcherley who so far had been making good progress, and looked like being a winner. On the way to Liverpool, a flying wire broke, necessitating a forced landing near Chester. Eventually, he arrived at Liverpool with a temporary repair made with string ! However, the replacing of the wire caused considerable delay, and he lost his chance of winning, although he carried on to the very bitter end.

Competitors otherwise made all the Controls—Liverpool, Bristol, Hamble, and Lympne without serious mishap, and the only retirement was that of Cantrill, who had to make a forced landing on the last leg near Crowborough.

Handicapping was again good, and as the end approached competitors began to draw together and adjust their positions. As on the previous day, Miss Spooner led at each Control, except Lympne, where Hope arrived just one minute in front ! She was overtaken at the last minute, in other words ! Most of the others arrived within an hour and a half, and a good finish at Brooklands was assured.

Meanwhile, we were waiting at Brooklands, where other exciting happenings were in progress. For one thing, the Junior Car Club's 200-mile race was providing entertainment throughout the afternoon (we can still hear Malcolm Campbell, the winner, thundering round the track). Then, also, the Royal Air Force, in the shape of No. 23 Squadron (Gloster Gamecocks) gave us a series of really beautiful exhibitions of formation flying and aerobatics. They were, in several respects, quite the best we have seen.

Shortly before four o'clock a machine unexpectedly, to some of us, appeared over the aerodrome and after a few frolics landed. It was Hope's " Moth," and there was a rush towards his machine ; he had not " crossed the line," however, and was hurriedly sent up again to do so, which he did at 3.55·11 p.m., but only just in time, for as he was being " recepted " a second machine came in. This was Uwins on the " Bristol," and 1 min 40 secs. later in came Miss Spooner in her " Moth " (fitted, incidentally, with the original " Cirrus 1 " engine) which has already about 900 hours' flying to its credit.

The King's Cup Air Race : Flying Officer Atcherley (left) and his passenger in the Gloster "Grebe" (Armstrong-Siddeley "Jaguar") which was the first machine in at Glasgow on Section I of the race.

["FLIGHT" *Photograph*

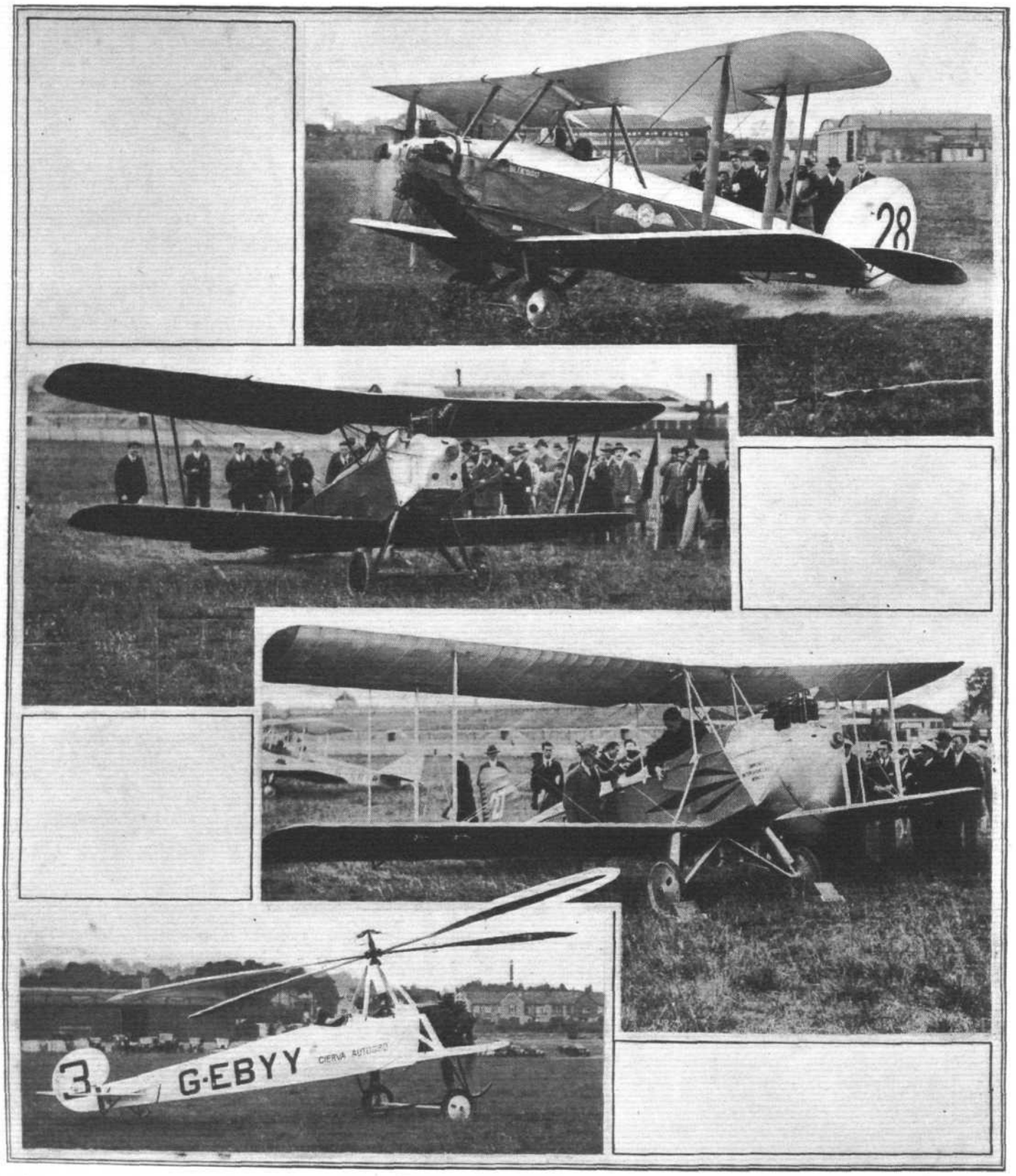
Miss Spooner was naturally accorded a very enthusiastic reception, for her performance was an exceptionally fine one—third in the King's Cup and first in the Siddeley Trophy Tour. One of the first to congratulate her was Hope, and they enjoyed a merry " chew " together. Uwins, it appeared might have overhauled Hope, but for the time lost on the previous day, when his compass went on strike and put him a good bit off his course—he employed the sun for the rest of the race !

Within the next half hour seven more machines came in in the following order—Broad (" Moth G ") ; de Havilland (" Moth G ") ; Butler (" Moth X ")—a few seconds between them ; Jackaman (" Moth X ") ; Bonham-Carter (Parnall " Imp ") ; Norman Jones (" Moth X ") ; and Noakes on the Blackburn " Lincock." This batch was a regular " Mother's Meeting."

After this the remaining 13 came in in spasmodic bunches until nearly 7 o'clock. Meanwhile, in the Paddock, Sir Charles Wakefield presented the King's Cup to the still-smiling W. Lawrence Hope, and then Mr. J. D. Siddeley handed over his trophy to Miss Winifred Spooner—who had meantime changed into a smart costume (sorry, lady readers, we cannot describe it !).

On being informed of the result of the race, His Majesty the King sent the following message through Lord Stamfordham—" The King thanks you for informing His Majesty of the result of the King's Cup air race and asks if you will convey his congratulations to the winner, W. L. Hope."

SOME AIRCRAFT TYPES IN KING'S CUP RACE



["FLIGHT" *Photographs*

VARIETY: These four photographs show aircraft types which differ a good deal in their characteristics. The upper photograph shows the Blackburn "Bluebird" with Armstrong-Siddeley "Genet" engine. The machine is a light 'plane, but is unusual in that pilot and passenger sit side by side. The next machine, the Avro Baby, is an old-timer, and was originally fitted with the Green engine. It was on a machine of this type that Bert Hinckler flew from London to Turin non-stop many years ago. The Simmonds "Spartan" is unusual, in that the wings are so designated that the same spare wing can be used on either side and as top or bottom plane. The bottom photograph shows the Cierva "Autogiro," in which the lift is obtained not by fixed wings but from the vanes of a rotating windmill.

JULY 26, 1928

MORE TYPES IN KING'S CUP RACE

["FLIGHT" *Photographs*

SOME MORE COMPETING MACHINES : Reading from top—the ill-fated Anec IV (Siddeley "Genet II"), which, piloted by G. N. Warwick, crashed into the hills near Peebles. The winning D.H. "Moth" (D.H. "Gipsy"), piloted by W. L. Hope. The Parnall "Imp" (Siddeley "Genet II") with Flying-Officer W. Bonham-Carter up, and the Bristol 83E (Bristol "Titan I") piloted by Sqdn.-Leader A. G. Jones-Williams. The Anec IV was designed by Mr. Bewsher and built by the Air Navigation Company. Originally it was fitted with a Blackburne "Thrush," but recently an Armstrong-Siddeley "Genet" was substituted, with a considerable gain in power. Hope's "Moth" is fitted with the new de Havilland "Gipsy" engine, of which three were entered and all of which completed the course. The Parnall "Imp" is unusual in having its top plane arranged with a pronounced sweep-back. The "Bristol" training machine is fitted with the new "Titan" engine, which is composed in the main of "Jupiter" parts, and has five "Jupiter" cylinders.

"ALL THE WINNERS": First, second and third in the King's Cup Air Race. Capt. W. L. Hope (centre) congratulating Miss Spooner on her splendid performance (King's Cup, Third; Siddeley Trophy, First), while C. F. Uwins, second man in, stands by.

["FLIGHT" *Photograph*

PREVIOUS KING'S CUP WINNERS.

SIX previous air races for the King's Cup have been flown, the first in 1922, and the following brief particulars of each winner may be of interest.

1922.—Capt. F. L. Barnard on a D.H. 4a (350 h.p. Rolls-Royce "Eagle"), entered by Sir Samuel Instone. Speed 120 m.p.h.

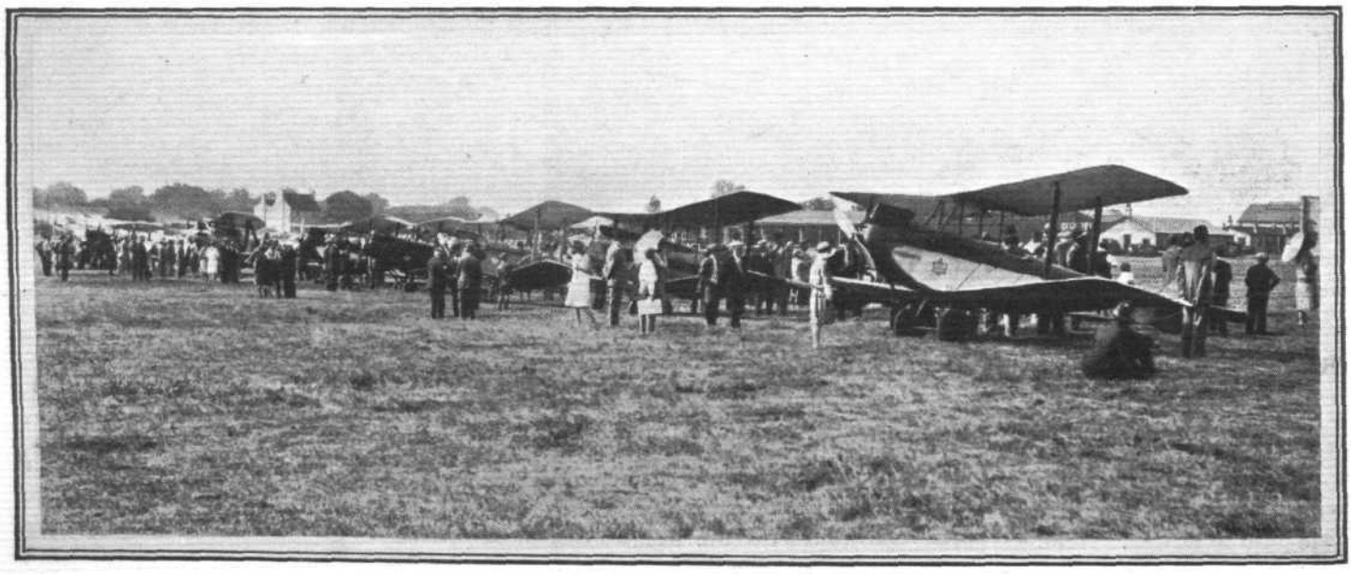
1923.—Capt. F. T. Courtney on an Armstrong Whitworth "Siskin" (325 h.p. Armstrong Siddeley "Jaguar"), entered by Mr. J. D. Siddeley. Speed 149 m.p.h.

1924.—Alan J. Cobham on a D.H. 50 (230 h.p. Armstrong Siddeley "Puma"), entered by Sir Charles Wakefield. Speed 106 m.p.h.

1925.—Capt. F. L. Barnard on an Armstrong Whitworth "Siskin" (395 h.p. Armstrong Siddeley "Jaguar"), entered by Sir Eric Geddes. Speed 141 m.p.h.

1926.—Capt. H. S. Broad on a D.H. "Moth" (27–60 h.p. A.D.C. "Cirrus 1"), entered by Sir Charles Wakefield. Speed 90½ m.p.h.

1927.—Capt. W. L. Hope on a D.H. "Moth" (27–60 h.p. A.D.C. "Cirrus 1"), entered by the pilot. Speed 92½ m.p.h.



["FLIGHT" *Photograph*

THE HOME PARK: As the machines finished at Brooklands they were lined up in a row. Here are some of the first arrivals.

FLIGHT
AIRCRAFT ENGINEER AND AIRSHIPS

PRIVATE FLYING

6196

The Rotterdam Meeting

Great Britain scores a success in Dutch International Competition

THE most disquieting flying meeting of recent years was held at the Waalhaven aerodrome, Rotterdam, on July 20-21-22. Disquieting, because of the thought that, should we have the opportunity of receiving in this country visitors from the Rotterdam Aero Club, it will be almost impossible to return the hospitality shown to visitors by the Dutch Club. Some weeks ago, in these pages, we expressed regret that the clashing of the dates of the Rotterdam meeting and the King's Cup Race would prevent most, if not all, British light 'planes from taking part. After our visit to Waalhaven we are secretly rather pleased that the two events did occur at the same time, otherwise the greater number of British visitors would but have increased a debt which, as it is, will be difficult to pay. We personally, and many of the other

6176

["FLIGHT" *Photograph*

BRITISH SUCCESS AT ROTTERDAM MEETING: The British team standing in front of Lady Heath's "Moth," with the other two "Moths" in the background. In the group, from left to right: Miss O'Brien and her passenger, the Hon. Miss M. K. Leith; Capt. Cordes and his passenger, Mr. Cooke; Lady Heath and her passenger and private secretary.

6174

["FLIGHT" *Photograph*

A TEAM IN THE RELAY RACE : In the foreground, Lady Heath's "Cirrus-Moth." In the centre, the Demonty-Poncelet, and in the background one of the Pander machines.

foreign visitors, have had some experience of hospitality in the Scandinavian countries, but even that is more than equalled by the Dutch variety. Indeed, it would be a sheer physical impossibility to do more for aerial visitors than the R.A.C. did at Rotterdam. That petrol and oil were supplied, free gratis and for nothing, and that each occupant of a visiting machine was handed a sum of approximately £6 towards hotel expenses, was but one, and in a way a very minor, expression of this hospitality. The way in which, on the aerodrome, in the hotels, at the dinners given in the evenings visitors were made to feel at home, to sense that the hosts were sincerely glad to have them, all this was an example of what real hospitality can be among aviation folk. And that is why we consider the Rotterdam meeting disquieting.

It is the intention of the Rotterdamsche Aero Club to make these Light 'Plane Meetings annual affairs, and next year care will be taken to see that the date shall not interfere with any flying event in other countries. That will certainly mean a much greater number of visitors, and this first meeting, although a relatively small beginning, has undoubtedly

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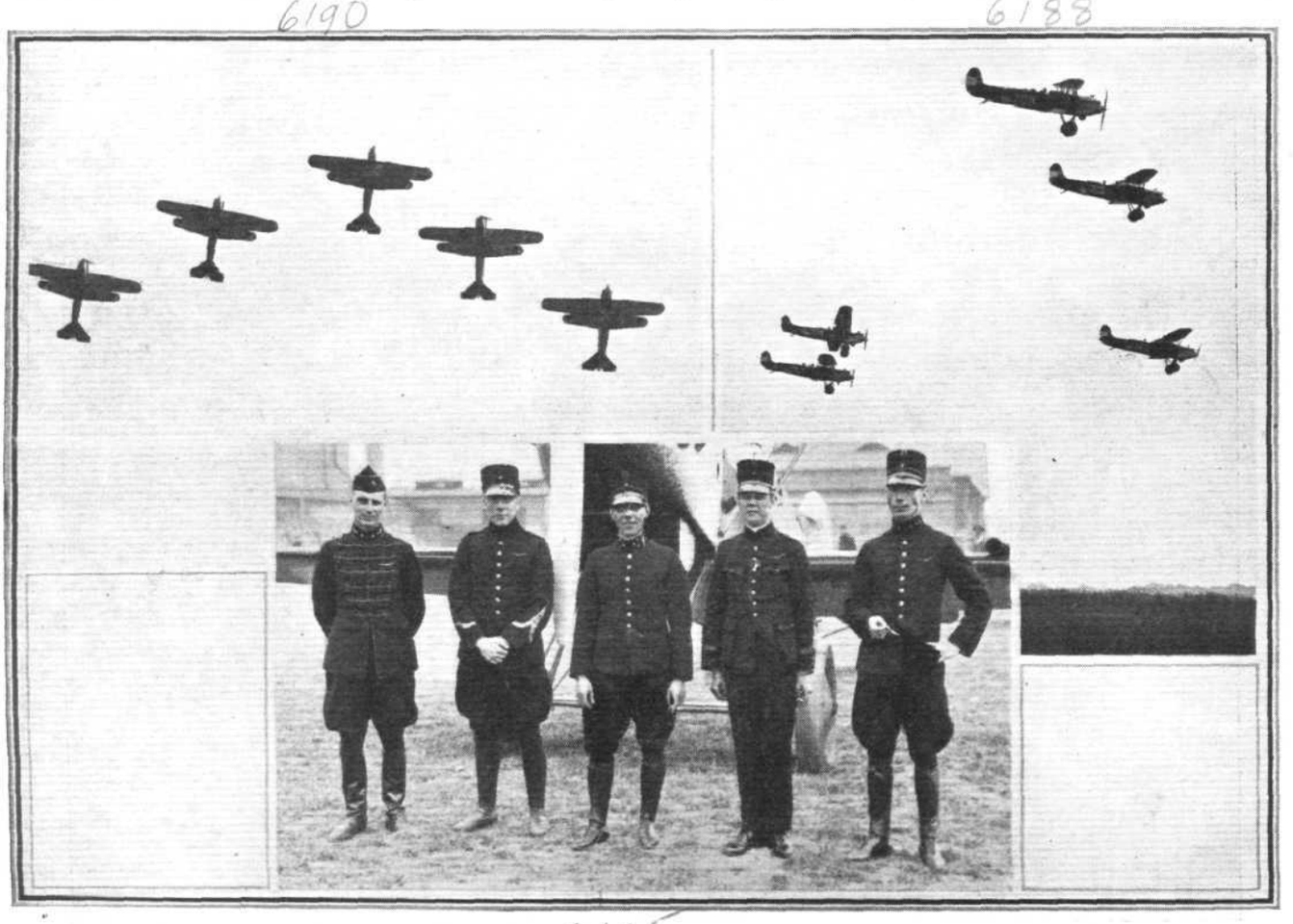

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["FLIGHT" *Photographs*

A VERY FINE SQUADRON : The two upper photographs show a flight of Fokker C. V.'s, which gave some excellent demonstrations of formation flying. Under the leadership of Capt. Versteegh, the Dutch pilots approach more nearly to British R.A.F. standards than any we have seen. The group in the lower photograph includes, from left to right, Lieut. Sandbergh, Sergt.-Maj. Bakkenes, Capt. Versteegh, Sergt.-Maj. v.d. Griend, and Lieut. v. Weerden Poelman. This is also the "formation" when flying.

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AIRCRAFT ENGINEER & AIRSHIPS

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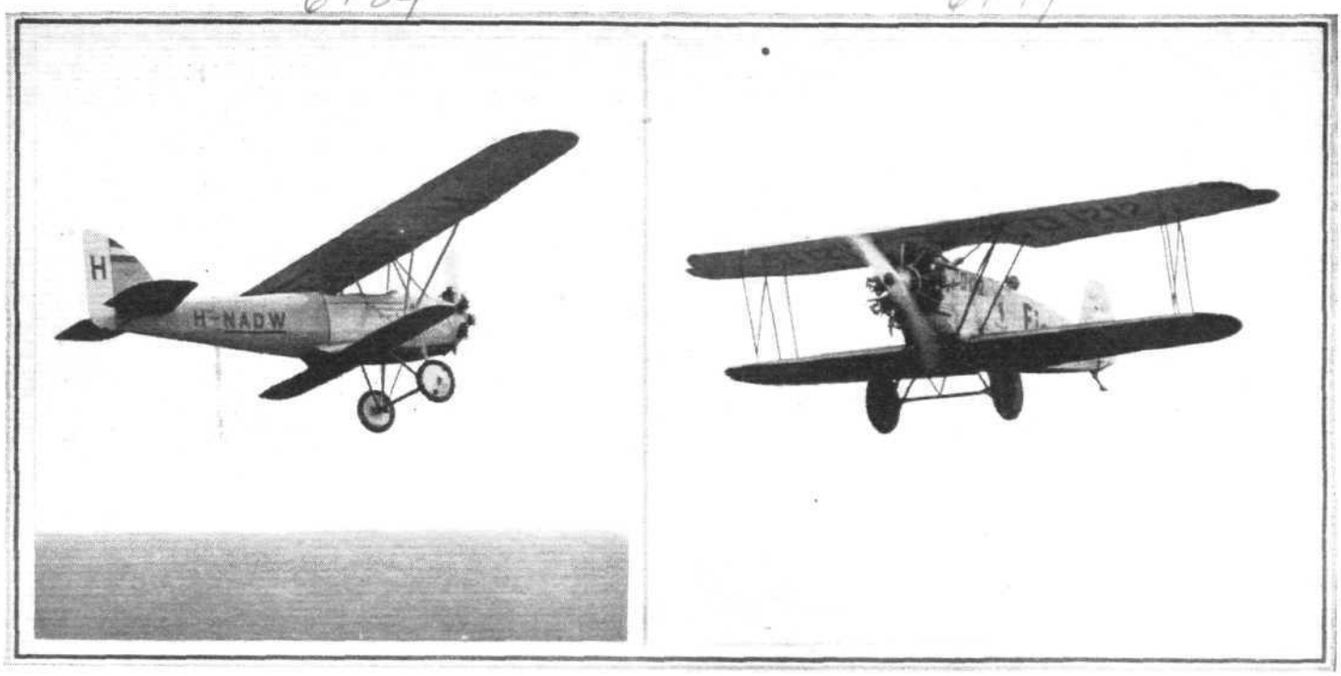

["FLIGHT" *Photographs*

FLYING AT WAALHAVEN : On the left, one of the Panders, and on the right, Herr Fieseler on his Raab-Katzenstein.

demonstrated how very valuable a series of international meetings and competitions of this kind can be in bringing together flying people of the various countries. At Rotterdam a number of friendships were formed which are bound to endure, and as the movement grows so will the number of people increase who in this way get to know each other. And it would seem that for British and Dutch flying folk to know each other is to like each other.

The organisers of the Waalhaven Meeting was the Rotterdamsche Aero Club, whose President is M. C. Kolff, and whose Secretary is M. J. de Niet. The Club is situated at Veerdam 1, Rotterdam, and it makes use of the Waalhaven aerodrome, where a large hangar houses its machines. At the present moment the Club owns three Pander biplanes, with a fourth on order. Considering that the Rotterdamsche Aero Club, or as we will call it hereafter, the R.A.C., does not receive any subsidy, this is a highly creditable effort. It is fairly obvious that the Club could not possibly buy so many machines out of its income from subscriptions, and we understand that it is fortunate enough to include among its members a certain number of wealthy people who show their interest in flying in the very practical form of substantial donations

6177

["FLIGHT" *Photograph*

THE D.C.A. AT WAALHAVEN : Sir Sefton Brancker paid a visit to the Rotterdam Meeting on Sunday last, arriving with a party on a Fokker placed at his disposal by the K.L.M. He is here seen, in front of one of the Pander machines with, among others, M. C. Kolff, Miss O'Regan, M. Schmidt Crans and M. de Niet.

to the Club's exchequer. The President of the Club, Mynheer C. Kolff, is apparently tireless in his efforts on behalf of the R.A.C., and as he belongs to one of the oldest and most esteemed families of the town, his work has been of inestimable value to the Club. In Mynheer de Niet the Club has an energetic and able Secretary, who on this particular occasion was suffering the disability of the after effects of a bad cold, which at times left him almost unable to speak. However, he "carried on," and very effectively too, although quite evidently he ought to have remained quietly at home taking a rest. It is to be hoped that now that the meeting is over he will be able to do so.

The club's instructor and chief pilot is Mynheer H. Schmidt Crans, whose handling of the Pander biplanes showed him to be a pilot of more than average ability, while the quality of the flying done by club members indicated that he is, in addition, an excellent instructor, two things which do not by any means always go together.

Organised under F.A.I. regulations, the Rotterdam meeting consisted in the main of a rally, a relay race, and a main competition, including an altitude test, a speed test, and take-off and alighting tests. Marks were awarded in certain of these.

The Rally

The first day of the meeting was Friday, July 20. Although the arrival of competitors and visitors was not expected until 4 p.m., FLIGHT (or such of it as could be spared from the King's Cup race) visited Waalhaven during the morning, and very interesting it proved. The aerodrome must surely be one of the very finest in the world. Of large area, perfectly flat and smooth, and with no tall obstructions surrounding it, Waalhaven is almost ideal. The fly in the ointment is not connected with the aerodrome itself, but with getting to and from it. Situated south of Rotterdam, and somewhat to the west, between the New Maas and the Old Maas, communication between the aerodrome and Rotterdam entails crossing the Nieuwe Maas either by the bridge some distance up-river, or a little lower down by the new ferry running between the Park and Charlois. In either case the trip takes a not inconsiderable time.

The amount of air traffic at Waalhaven is little short of amazing, machines arriving and departing with a few minutes' interval apparently all day long. M. Plesner, Managing Director of the K.L.M., has cause to be proud of his company, which, although at present receiving a Government subsidy, appears to be so busy that the day when the company can do without this subsidy appears to be in sight. The layout of the offices, hangars, restaurant, customs, workshops, etc., is excellently planned, and everything is on a generous scale, built obviously with future development in view. The K.L.M. machines are well kept, well looked after, well handled and manned, and well patronised.

As already mentioned, the Rotterdamsche Aero Club has a large hangar on the aerodrome, and a short distance away is a smaller hangar on which appears the familiar name "Koolhoven." Knowing that in all probability our old friend would have something new there, we made our way thither. And sure enough, a little three-seater touring monoplane of the *conduite interieure* type was standing there, ready for flight. Fitted with a Siemens engine of about 50 h.p., this little machine has the pilot seated in front, with two passengers, side by side, behind him in seats of the deck-chair variety. A small three-seater of this type should find a ready market, and with its low power should be very economical to run We gather that it is also contemplated to produce a new "nose" to take the "Cirrus" engine. The extra power and the cleaner nose thus made possible should produce a very useful little machine indeed. Being a three-seater, the F.K.41 is too heavy to come into the light 'plane class, and thus it was debarred from taking part in the Rotterdam competition.

"Zero Hour" had been fixed for 4 p.m., and as that hour approached a machine which soon proved to be a "Cirrus Moth" flew across the aerodrome. It did not, however, land at once, but cruised around for a while. The identification letters G-EBZC indicated it to be Lady Heath's new machine, and when it alighted, just *before* 4 o'clock, this proved to be the case. By touching the ground just before "zero hour" she was disqualified from scoring any marks.

The old Demonty-Poncelet O-BAFL arrived next, piloted by Wouters, but as the machine is too heavy for the light 'plane class, it could not take part in the main competition. Cordes, on the "Cirrus Moth" G-EBXG with Handley Page automatic slots, arrived next, a few moments after 4 o'clock. Then there was a long wait, until about 4.55, Desmottes, on the Caudron monoplane F-AIRA touched the ground, followed by Miss O'Brien on her "Moth" G-EBOS. Miss O'Brien had misunderstood the instructions and thought "zero hour" was at 4 p.m. Greenwich Mean Time, instead of Dutch time. By waiting at St. Inglewert, she thus lost a considerable number of marks. Shortly before 6, Herr Fieseler arrived from Germany.

6186

["FLIGHT" *Photograph*

The right spirit: Trying out each other's machines was a favourite pastime at Waalhaven. Lady Heath is here seen after a flight in one of the Pander machines. In the front cockpit is M. Schmidt Crans, and standing by the side of the machine, M. Slot, constructor of the Pander aeroplanes.

In the evening the R.A.C. gave a dinner at "De Maas" Yacht Club, at which M. Kolff welcomed the visitors in English, French, German and Dutch. This dinner was a most charming affair, but had to be cut rather short, as a special exhibition of the film "Wings" had been arranged to follow elsewhere.

The Climbing Tests.

Saturday morning was devoted to the altitude tests of the main competition. In this, the competing machines were required to reach a height of 1,500 metres in the shortest possible time, carrying their competition load (*i.e.*, a weight of pilot and passenger of 160 kg. and a luggage weight of 20 kg.). Although useful, this test was naturally not spectacular, but the time was whiled away very pleasantly by watching Capt. Versteegh's flight of five Fokker C. V. machines with Hispano engines giving demonstrations of formation flying, "going around the mulberry bush." &c. The quality of the formation flying was very high indeed, and British visitors at any rate were agreed that nowhere outside England was better formation flying to be seen.

During the morning two Belgian machines, type RSV. with "Renard" engines, arrived. These are two-bay biplanes of the normal training type, and belong to the Antwerp Aviation Club. Capt. Cordes brought out his

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["FLIGHT" *Photographs*

SOME AIRCRAFT TYPES AT THE ROTTERDAM MEETING: 1, two Belgian R.S.V. school machines with Renard engines. 2, a Raab-Katzenstein "Pelikan" with "Cirrus" engine. 3, the new Koolhoven monoplane, type F.K. 41. This is a three-seater touring machine. 4, a Belgian Light 'Plane.

6181

"TINY AND TOT": Mr. and Mrs. F. Koolhoven, standing by the new F.K. 41 monoplane.

"Cirrus Moth" fitted with Handley Page automatic slots and gave a very good exhibition of control in the stalled condition. M. Schmidt Crans did very nearly the same things without slots, flying the latest Pander biplane, which appears to be remarkably stable—and yet very manœuvrable. Herr Fieseler gave a demonstration of slow rolls and upside-down flying. His rolls are particularly "finished," the fuselage apparently never deviating from its horizontal attitude, nor swerve to one side or the other.

During the afternoon, were held the first two heats of the relay race, in which competing machines were divided by the racing committee into groups of three, a machine of each group starting off together and, when returning, passing the "Estafette" to the second machine, and so on. This item provided quite a lot of amusement, but it was hard work for the passengers running about in the hot sun. When not engaged in the relay race, the three Pander machines gave some very good exhibitions of formation flying. H. Pander, Jnr., being one of the pilots and a very good one. Herr Fieseler came out again, and this time his upside-down circuits of the entire aerodrome proved the most attractive feature.

In the evening there was night flying, M. Geysendorffer taking up a large number of passengers in van Lear Black's three-engined Fokker H-NADP with "Titan" engines. His landings were remarkably good, although on one occasion the loudspeakers in the enclosures began to play "Hallelujah" somewhat tactlessly, just as he was gliding in to land.

The Main Competition.

The more "serious" sections of the programme had been scheduled for Sunday, July 22, commencing with take-off and landing tests. The competing machines had to take off from the starting line, the distance being measured to the point where the wheels left the ground. In the second part of this test, the machines were required to clear a barrier represented by a string carrying flags, stretched at a height of 10 ft. above the ground, the distance from the starting line to the barrier being twice the take-off distance of the first take-off. The second part was intended to demonstrate that the machines had not been "hoiked" off the first time

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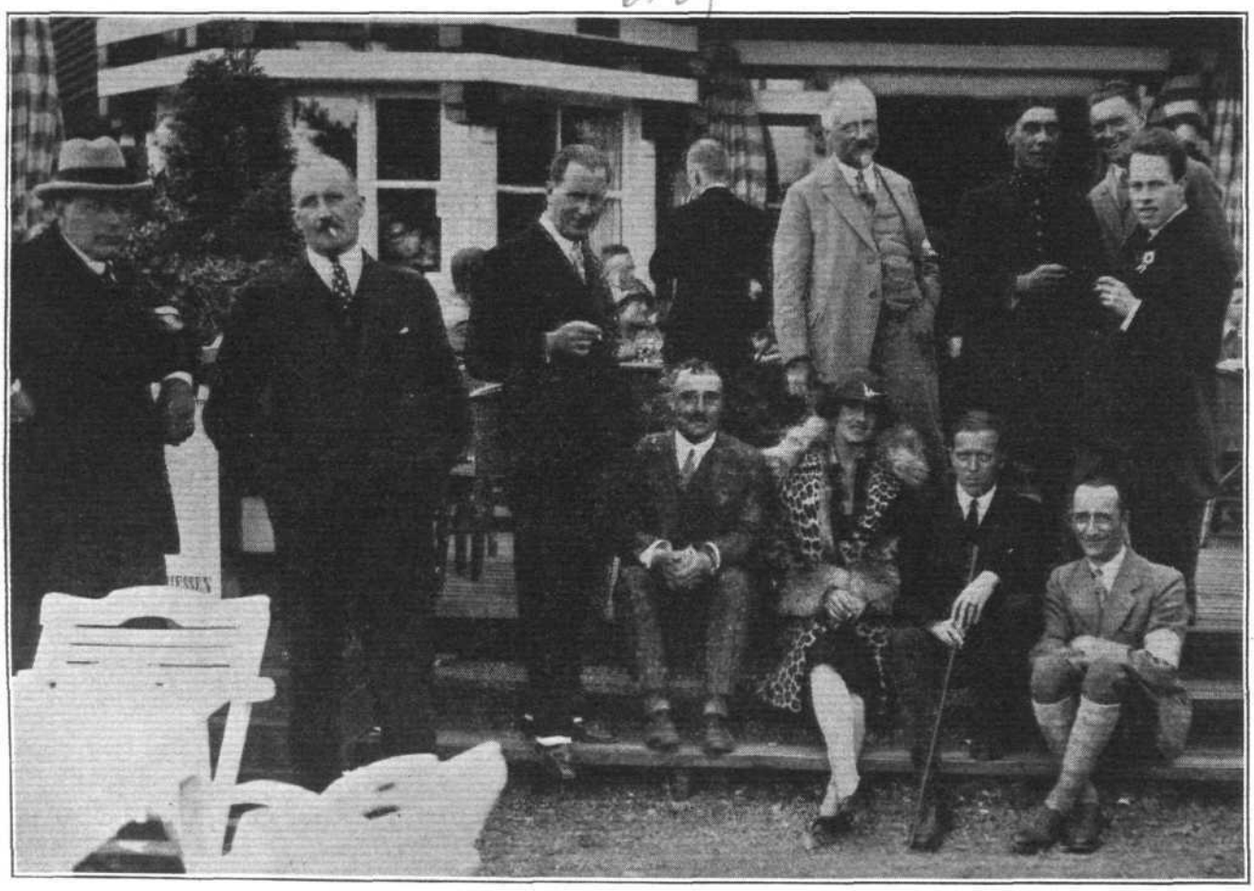


["FLIGHT" *Photograph*

AT THE ROTTERDAM FLYING MEETING: An international group. Standing, from left to right, Mr. Koolhoven, M. B. Stephan, M. v. Meel, Dr. E. B. Wolff, Capt. Versteegh, Herr Gerhardt Fieseler, M. J. de Niet (Secretary of the R.A.C.). Seated: Jhr. v. d. Berch van Heemstede, Lady Heath (winner of the competition), M. C. Kolff (President of the R.A.C.) and Lieut. J. Jongbloed.

before they were really up to proper flying speed. In the take-off tests the following distances were recorded : Couson, on Klemm-Daimler, 45·3 m. ; Desmottes, on Caudron monoplane, 57 m. ; Lady Heath, on " Cirrus Moth," 63·7 m. ; Sandberg, on Pander 80 m. ; v.d. Graft, on Pander, 82 m. ; Schmidt Crans, on Pander 93·5 m. ; Cordes, on " Cirrus Moth," 99 m. ; and Miss O'Brien, on " Moth (Cirrus I) 109 m. The take-off of the little Klemm-Daimler was perfectly amazing, but the very efficiency of the machine was against it when it came to landing, the high L/D causing it to " kite."

In the landing competition machines had to land over the same barrier, and Cordes came to grief, a bolt in his undercarriage shearing off. An examination of the bolt afterwards seemed to indicate that wear had taken place, and probably, a slight flaw in the material may have been present also. Certainly, the shock was not such as ought to have resulted in failure.

The following landing runs were measured : Desmottes, 97 m. ; Lady Heath, 108 m. ; v. d. Graft, 113 m. ; Miss O'Brien, 116·5 m. ; Sandberg, 132 m. ; Couson, 144·6 m. ; Schmidt Crans, 145 m.

In the afternoon the first event was the speed test, which was flown over a triangular course of 20 km. length, which had to be covered twice. The following speeds and times were recorded :—

Pilot.	Machine.	Time.		Speed. km./h.	Speed. m.p.h.
		m.	s.		
Lady Heath	" Moth "	15	05	159	98·8
Crans ..	.. Pander	16	$26\frac{3}{5}$	146	90·6
v.d. Graft	.. Pander	16	$39\frac{3}{5}$	144	89·4
Sandberg	.. Pander	16	47	143	88·7
Miss O'Brien	.. " Moth "	18	49	127·5	79·2
Desmottes	.. Caudron	19	22	124	77
Couson	.. Klemm	25	$23\frac{3}{5}$	94·6	58·7

During the rest of the afternoon was flown the final of the relay race, and exhibition flights, &c., were the order of the day. Herr Fieseler did his usual stunts, plus two new ones, of which one consisted in doing slow rolls while at the same time circling the aerodrome. In the other, Herr Fieseler would do the first half of a loop, and then, instead of continuing the loop, he would do an upward corkscrew, which was rather effective.

Final Classification

In the final classification, Lady Heath was first with 176·5 points ; Desmottes second with 159·43 ; v. d. Graft third with 136·52 ; Sandberg fourth with 128·62 ; Couson fifth with 126·84 ; Schmidt Crans sixth with 109·54 ; and Miss O'Brien seventh with 104·3 points.

The relay race was won by the following team : Miss O'Brien (Moth), Desmottes (Caudron) and Bossyns (Belgian R. S. V.).

In the Rally, Cordes was first (Moth), with Desmottes (Caudron) second, and Miss O'Brien (Moth) third.

In the evening, all competitors and many others were the guests of the Rotterdamsche Aero Club at a banquet. FLIGHT had to leave early in order to get this article prepared in time to appear this week, but we gather that others not similarly handicapped had a thoroughly amusing evening, as a fitting conclusion to one of the most pleasant air meetings ever held in any country.

LIGHT 'PLANE CLUBS

London Aeroplane Club, Stag Lane, Edgware. Sec., H. E. Perrin, 3, Clifford Street, London, W. 1.

Bristol and Wessex Aeroplane Club, Filton, Gloucester. Secretary, Capt. C. F. G. Crawford, Filton Aerodrome, Patchway.

Hampshire Aero Club, Hamble, Southampton. Secretary, H. J. Harrington, Hamble, Southampton.

Lancashire Aero Club, Woodford, Lancs. Secretary, C. J. Wood, Oakfield, Dukinfield, near Manchester.

Midland Aero Club, Castle Bromwich, Birmingham. Secretary, Maj. Gilbert Dennison, 22, Villa Road, Handsworth, Birmingham.

Newcastle-on-Tyne Aero Club, Cramlington, Northumberland. Secretary, A. H. Bell, c/o The Club.

Norfolk and Norwich Aero Club, Mousehold, Norwich. Manager, F. Gough, The Aerodrome, Mousehold, Norwich.

Nottingham Aero Club, Hucknall, Nottingham. Hon. Secretary, Cecil R. Sands, A.C.A., Imperial Buildings, Victoria Street, Nottingham.

The Scottish Flying Club, 101, St. Vincent Street, Glasgow. Secretary, Harry W. Smith.

Southern Aero Club, Shoreham, Sussex. Secretary, C. A. Boucher, Shoreham Aerodrome, Sussex.

Suffolk Aeroplane Club, Ipswich. Secretary, Maj. P. L. Holmes, The Aerodrome, Hadleigh, Suffolk.

Yorkshire Aeroplane Club, Sherburn-in-Elmet, Yorks. Secretary, Lieut.-Col. Walker, The Aerodrome, Sherburn-in-Elmet.

LONDON AEROPLANE CLUB

REPORT for week ending July 22.—Total flying time, 32 hrs. Dual instruction, 13 hrs. 10 mins. Solo flying, 18 hrs. 50 mins.

Solo flying.—P. W. Hoare, R. Sanders Clark, P. A. Wills, W. Roche Kelly, J. J. Hofer, E. E. Stammers, Will Hay, M. L. Bramson, G. H. Craig, H. M. Samuelson, Art. Fowler, J. C. V. K. Watson.

Dual instruction.—C. Reilly, J. Hanson, A. Pitt, E. H. Thierry, G. A. Stedall, T. H. O. Richardson, R. M. Doidge, B. Carey, R. S. Rattray, Miss V. M. Cholmondeley, S. Nesbitt, H. M. Samuelson, A. Hill Reid, B. E. Johnstone, L. G. Sykes.

On Saturday last the club took delivery of G-EBYD a D.H. " Moth " Cirrus Mark II.

On Saturday the club machines were used for ferrying members from Stag Lane to Brooklands to witness the finish of the King's Cup Air Race.

In the fatal accident to Mr. G. N. Warwick, the club loses one of its earliest members. Mr. Warwick was the first member of the club to take out his " A " Licence. The deepest sympathy of all members is extended to his relatives.

BRISTOL & WESSEX AEROPLANE CLUB, LTD.

REPORT for the week ending July 21.—Total hours flying, 28. Instruction, 8 hrs. 40 mins. Passengers, 70 flights, 8 hrs. 10 mins. ; cross-country, 1 flight 1 hr. 30 mins.

Dual instruction : Under Mr. Tratman : Messrs. Amory, Lysaght, Allinson, Singh, Keeling and Putnam. Under Mr. Travers : Miss Miles, Messrs. Harris, Hall, Bathurst, Neale, Singh, Warren, Chopra, Lysaght, Keeling, Greenhill and Laws.

Soloists : Messrs. Downes-Shaw, Hall, Bathurst and Jopp.

Mr. H. G. Travers, our new deputy instructor arrived on Tuesday, and so full-time training is possible again.

The King's Cup Race was watched with great interest in ideal weather. Miss Spooner, who arrived first at Filton was, we were glad to learn the winner of the Siddeley Trophy and third in the King's Cup. We congratulate her heartily. Mr. A. S. Butler, our representative, was fifth in the King's Cup and second in the Siddeley Trophy. A great performance was that of Capt. C. F. Uwins, of the Bristol Aeroplane Company, who was second in the King's Cup, in which he beat many notable pilots.

Mr. Downes-Shaw left here at 5.30 p.m. after the race, taking Lord Apsley as passenger back to Andover Aerodrome. The journey took 40 mins. and the return 50 mins.

Our pupils are all coming on well, and we hope before long to have several doing their first solo.

CINQUE PORTS FLYING CLUB

REPORT for week ending July 14. —Owing to the unfortunate accident on the 7th instant, no flying took place during the week, which was occupied in arranging with the Insurance Company for delivery of another machine to replace G : EBWC, and it was settled that the club should take over the Moth G : EBSS " Jeunesse " formerly the property of the Viscomte de Sibour and this was fetched from Stag Lane by Major Clarke on Sunday. Flying will now proceed as usual.

This club is working the Lympne control for the King's Cup Race in conjunction with the Royal Aero Club. There will be a public enclosure, admission 6*d.*, from which transfer can be had to the club enclosure next to the point where the competitors will refuel, for a further 2*s.* 6*d.* The competitors will stay half an hour at Lympne, so that the public will get an opportunity of inspecting them. Joy rides will be available in the club's " Moth," and possibly other machines as well. There will be a minimum charge of 10*s.* for joy rides.

The proprietors of two of the most prominent local newspapers have offered a cup valued £10, to be known as " The Folkestone Herald and Kent Evening Echo Cup," for the private owner flying his or her own aeroplane in the King's Cup Race, who makes fastest time between the controls at Southampton and Lympne. This generous award will add much to the local interest in the King's Cup Race.

HAMPSHIRE AEROPLANE CLUB

REPORT for week ending July 20.—Total flying time, 66 hrs. 20 mins ; dual instruction, 35 hrs. 30 mins. ; " A " pilots, 11 hrs. 55 mins. ; solo, 10 hrs. 25 mins. ; passenger flights, 7 hrs. ; tests, 1 hr. 30 mins.

Instruction with Flight.-Lieut. Swoffer and Mr. W. H. Dudley. : Mr. Westlake, Major Jenkins, Mr. Dalrymple Smith, Mr. Walker, Mr. Beagley, Mr. Sturge, Lieut. Mandeville, Dr. Russell, Mr. Tobutt, Mr. Mole, Mr. R. King, Miss Melvill, Squadron-Leader Bradyll Johnson, Mr. Buckley, Lieut.-Cmdr. Coveney, Mr. Neave, Mr. Wells, Mr. Robertson, Mr. Curtis Nuthall, Miss Grace, Mr. Berney, Mr. Kerry, Mr. Craske, Lieut. Dallmeyer, Mr. Fletcher, Mr. Goldman, S./Lt. Colls, Mr. Phillimore, Mr. Somerset, F./Lt. D'Aeth, Lieut. Townsend, Mr. Knight, Mr. Turner, Mr. Reuther, Mr. T. Martin, Mr. Brewster, Mr. W. Martin, Mr. Agar, Mr. Redwood, Lieut. Donner, Mr. Brodrick, Mr. J. S. M. Richards, Mr. Farmer, Comdr. Bell.

" A " pilots :—Capt. Kirby, Mr. Baynes, Lieut. Heath, Lieut. Fagan, Mr. Parker, Mr. Michelmore, Don J. de la Cierva, F./O. Mellor, Lieut. Collier, F./Lt. Crawford.

Soloists : Mr. Perfect, Mr. Fawkes, Mr. H. King, Mr. Scott-Hall, Mr. Wells, Mr. Lardon, Mr. Curtis-Nuthall, Mr. Wills, Mr. Kerry, S./Lt. Tillard, Mr. Whittle, Major Jenkins, S./Lt. Colls, Mr. Westlake, Lt. Townsend, F./Lt. D'Aeth.

Passengers : Miss Luard, Miss Moxon, Miss Randolph, Miss Maron, Miss Roake, Mr. Pearce, C.E., Mr. G. Pearce, Mrs. Crook, Mr. Carter, Miss Hare, Mr. Wills, Mr. Clifford, Mrs. Waterman, Mr. Stillingbert, Mrs. Holmes, Mrs. West, Miss LeLubez, Mr. Baswell, Mr. Broderick, Mr. Redwood, Mr. Matlocke, Mr. Lambinson, Mr. Bell, Mr. Denrie, F./O. Richardson, Mr. Harrington, Miss Collins, Miss B. Collins, Mr. Long, Mr. G. Smith, Miss G. Smith.

Major Jenkins and S./Lt. Colls achieved successful first solos. The former instead of doing one circuit as instructed in his keenness did four. The ladies present said they were glad the engine was running and the Chief Instructor tackled him on his arrival. We did not hear but can imagine what he said.

King's Cup Air Race.—A small but enthusiastic crowd turned up on Saturday to watch the arrivals in the King's Cup Race.

Miss Spooner was the first to land, and she was followed shortly afterwards by Captain Hope, the eventual winner.

Keen interest was displayed when Flight-Lieut. Webster arrived on the Spartan.

It was seen that the "Avenger," the fastest machine in the race, had no chance of overtaking the leaders.

We extend our congratulations to Captain Hope on winning the race, and to Miss Spooner on securing the Siddeley Trophy.

LANCASHIRE AERO CLUB

REPORT for week ending July 14.—Flying time, 22 hrs. 35 mins.; instruction, 10 hrs. 50 mins.; solo flights, 6 hrs. 35 mins.; passenger, 4 hrs. 10 mins.; tests, 1 hr.

Instruction: With Mr. Baker: Messrs. Williamson, Davies, Stross, Taylor, Agar, Greenhalgh, Harrison, Faulkner, Weale, Ashworth, Serck, Mills, Garner, Kay, Sellars, Allott, Brooking, Chart, Davis (R.G.), Miss Baerlein and Miss Emery.

Soloists (under instruction).—Messrs. Mills, Harrison, Weale and Garner.

Pilots: Messrs. Meads, Harbour, Gort, Lacayo, Twemlow, Gerrard, Ruddy, Chapman, Hall and Agar.

Passengers: With Messrs. Rowley, Scholes, Hall, Leeming, and Michelson—8.

Our crash average has improved during the week, two crashes being recorded against the usual one. QL and RR were the culprits (or victims according to the angle of view-point), but neither of the accidents were serious. The most serious thing about them was that they interfered very much with flying during by far the best week of weather that we have yet experienced.

FROM THE FLYING SCHOOLS

The De Havilland Flying School, Stag Lane Aerodrome

REPORT for week ending June 22:—Total flying time, 261 hrs. 10 mins. Instruction: dual, 105 hrs. 15 mins.; solo, 107 hrs. 5 mins. Other flying 48 hrs. 50 mins.

We have put in another excellent flying week on the school, and as our pupils still increase in numbers we have secured the services of yet another instructor.

On Monday five of our advanced pupils took five D.H.9's in very excellent formation to Coventry and Bristol Schools. The sight of five civil machines flying in formation was pretty to watch, and was an extremely brilliant achievement in the fact that the pilots had never before attempted formation together.

Five pupils carried out excellent first solos, and one pupil passed his night-flying test for "B" licence.

The Hon. D. F. Tennant and Sir Pyers Mostyn passed their "A" licence tests.

Ten new Moths were tested and despatched, thus keeping our delivery programme up to scratch.

The King's Cup race on Friday and Saturday was the medium of a great triumph for Moth machines, the performance of the new Gipsy Moths being especially brilliant, as of the three entered one proved to be the winner, and the other two finished in the first six.

It is with sincere regret that we learn of the tragic death of Mr. G. N. Warwick, an old member of our School and a well-known figure at Stag Lane.

Henderson Flying School, Brooklands Aerodrome

REPORT for week ending July 19.—Total flying time, 47 hrs. 45 mins.

Dual (with Col. G. L. P. Henderson): Messrs. Du Cane, Bennett, Guiness, Stewart.

Dual (with Capt. H. D. Davis): Messrs. Davies, Preston, Oldmeadow, Hamilton, Daniels, Kerr, Forthergill, Murphy, Stewart, Dr. Taylor, Swan, Knight, Norbury, Groner, Oliver, the Misses Wellby, Stoop, Chapman, Mrs. Scott.

Dual (with Capt. W. F. Davenport): Miss Wellby, Dr. Taylor, Messrs. Murphy, Davies, Swan, Miller, Stewart, Preston, Hill.

Soloists: Messrs. Oliver, Hamilton, Swan, Hill, Allen.

Most of our pupils have taken advantage of the fine spell of weather we have had lately and the school has been kept very busy.

Mr. Du Cane carried out his solo quite successfully.

We have pleasure is welcoming the well-known lady motorist, Mrs. Scott, to our school, who shows signs of becoming an expert pilot. Many other pupils have enrolled during the past fortnight, and the school is now a hive of industry from morning till night.

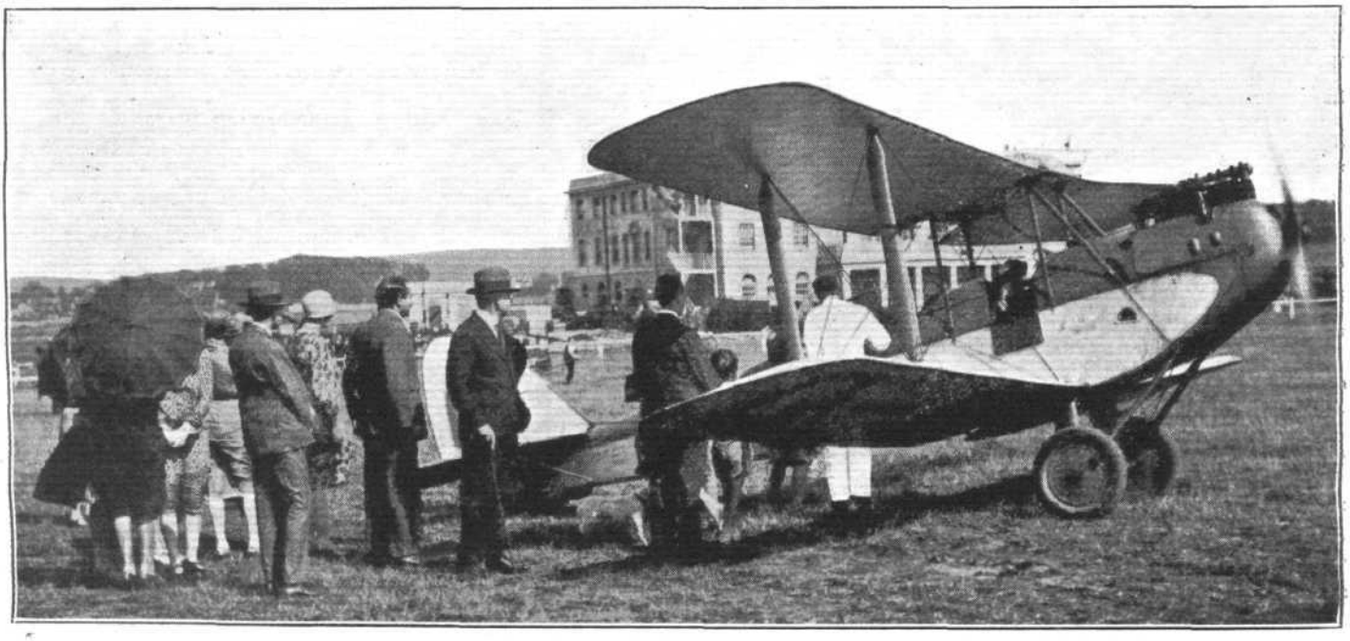
New Private Owners

Owners	Machines	Identification Letters	Date of Registration.
H. J. V. Ashworth	Avro "Avian" ..	G-EBXJ	29.5.28
A. G. H. Bond ..	Avro "Avian" ..	G-EBWU	16.6.28
L. J. P. Fowler ..	D.H. "Moth X"..	G-EBZH	9.7.28
P. G. McArthur Murdock ..	Avro "Avian" ..	G-EBVU	17.5.28
K. G. Murray ..	D.H. "Moth X"	G-EBWA	11.5.28
A. A. Nathan ..	D.H. "Moth X"	G-EBYV	23.6.28
J. S. Oliver.. ..	D.H. "Moth X"	G-EBZG	6.7.28
E. Percival ..	Avro "Avian" ..	G-EBYR	—
O. E. Simmonds ..	Simmonds "Spartan"	G-EBYU	23.6.28
E. H. Thierry ..	D.H. "Moth X"..	G-EBZI	6.7.28
H. M. Yeatman ..	D.H. "Moth" ..	G-EBVD	25.6.28

After including the above new private owners in the list, we find that the exact number of owners registered and flying in this country is 94.

Air Garden Party

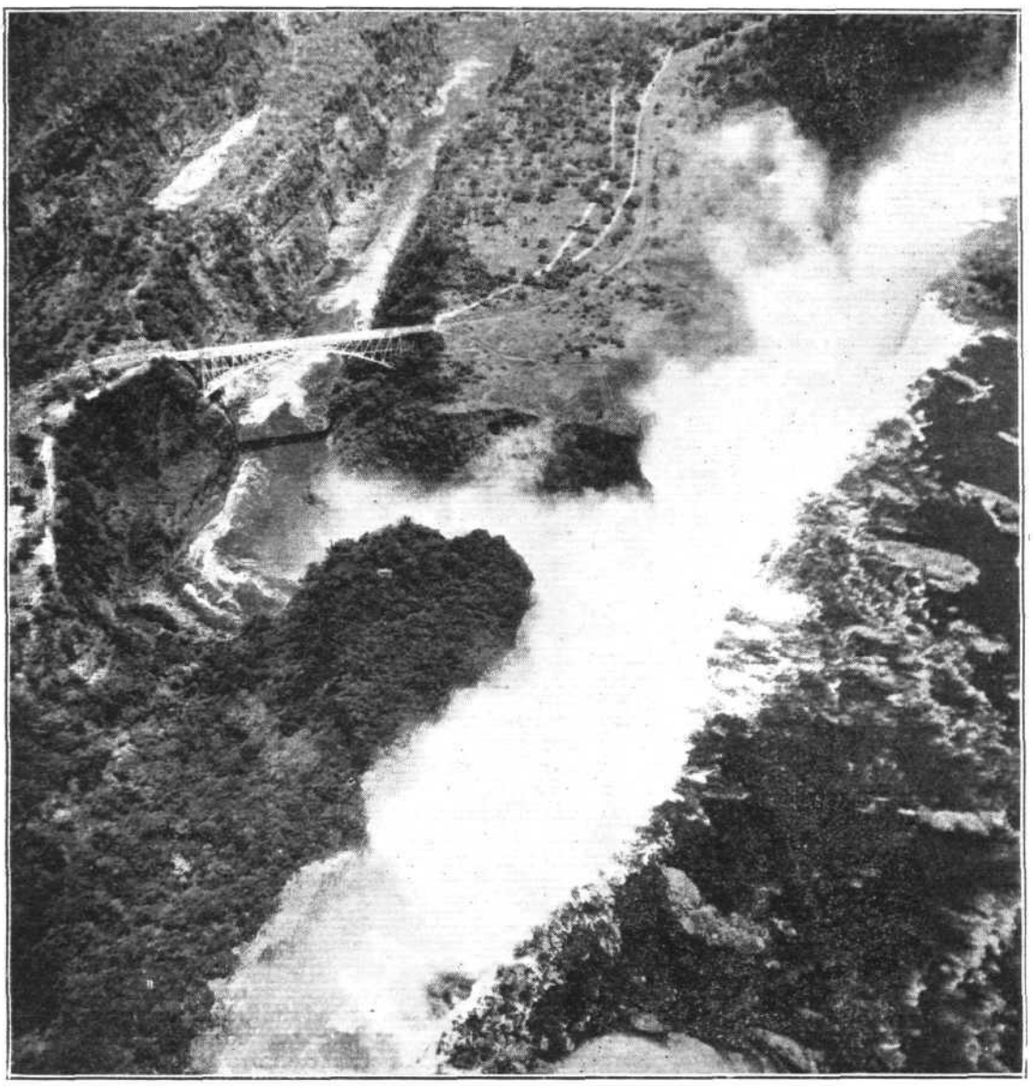
SIR JAMES and Lady Heath gave a flying garden party at Croydon aerodrome on July 18 to 230 guests, each of whom was entitled to ballot for a flight in one of two D.H. "Moths." One in every five were flown, the pilots being Lady Heath, Miss O'Brien and Mr. Stammers. Many children were among the passengers. Most of the guests arrived by car but six flew down. Many pilots gave exhibitions of aerobatics. Among those who accepted invitations were:—Air Vice-Marshal Sir Sefton Brancker, Col. The Master of Sempill, the Hon. Mrs. Forbes Sempill, Sir Pyers Mostyn, Maj. G. Dennison, Capt. G. and Mrs. De Havilland, Mr. and Mrs. A. V. Roe, Col. A. Heath, Sir Francis K. McLean and Lady McLean, Lord and Lady Huntingfield, Sir Trevor and Lady Dawson, Mr. Douglas Hacking, Sir Francis Newbolt, Lady Dorothy Mills, Sir George and Lady Younghusband, Lord and Lady Saye and Sele, Sir Percy and Lady Cox, Brig.-General and Mrs. Groves, Mrs. Francis Maitland, Flight-Lieut. Horniman, Sir John and Lady Rhodes, Dame Beatrix Lyall, Sir Edward Mountain, Lady Brackenbury, Capt. George Larden, Lady Bax-Ironside, Prince and Princess Wiasemsky, Count and Countess Van den Heuval, and Mrs. Forbes McGrath.



["FLIGHT" *Photograph*

LADY HEATH'S AERIAL AT HOME: On July 18 Sir James and Lady Heath gave a Garden Party at Croydon Aerodrome. The guests were taken for flights during the afternoon, and many had their "bapteme de l'air" on this occasion. In this photograph is seen Miss O'Brien's "Moth" about to take up Mrs. Patrick Ness.

FLIGHT



Victoria Falls from the Air: A splendid oblique photograph of the Victoria Falls taken by the Aircraft Operating Co. during their air survey of the Zambesi. On the left, under the bridge, is the "Boiling Pot," and farther to the right, in the centre, is "Danger Point." "The Knife Edge" is seen at the bottom of the picture. These Falls are extremely difficult to photograph—either from the ground or the air—owing to the immense volumes of dense spray which envelop them for some distance round and above. Our readers will agree that this photo is certainly a very excellent one.

R.Ae.S. & Inst.Ae.E. Examinations

INTENDING candidates who wish to take the Associate Fellowship or Associate Membership examination of the R.Ae.S.I. are reminded that the former will be held in the week beginning Monday, September 17, and the latter in the week beginning Monday, September 24. Candidates should advise the Secretary as soon as possible of their intention to take the examination, but in any case not later than August 17 and August 24 respectively, so that the necessary arrangements can be made.

IN PARLIAMENT

His Majesty's Ship "Furious"

MR. BRIDGEMAN, on July 18, in answer to Lieut.Comdr. Kenworthy, said the approximate full speed of H.M.S. *Furious* was 31¼ knots before conversion, and is now 30 knots. She carries 36 aeroplanes, of which 12 can be converted to seaplanes.

Accidents

CAPT. GARRO-JONES asked the Secretary of State for Air how many flying officers and men have been killed since the beginning of this year; and what is the total number of officers on regular flying duty in the Royal Air Force?

Sir S. Hoare: The answer to the first part of the question is 50, including one officer shot down in action. This number covers the Royal Air Force and Auxiliary Air Force and personnel of the Army and Navy attached. Of the 50, 30 were pilots and 20 passengers. The answer to the second part of the question is 2,706, including the Auxiliary Air Force, cadets and airmen pilots.

Slotted Wing Device

CAPT. GARRO-JONES asked whether the Vickers-Vulcan machine which crashed last week was fitted with the slotted wing safety device; and if not, how many of the machines in regular use by the Imperial Airways Company are not so fitted?

Sir S. Hoare: The answer to the first part of the question is in the negative. As regards the second part, I understand that certain new machines on order for Imperial Airways, Limited, are to be fitted with this safety device, but that none of the machines now in use is so fitted.

Capt. Garro-Jones: Has the right hon. gentleman made any representations to the Imperial Airways Company, in view of the fact that this device is fitted to the Royal Air Force machines, pointing out that the company ought to fit it to their existing machines?

Sir S. Hoare: I know, from the communications which I have had with the company, that they are fully alive to the position. There is a difference between the use of the slotted wing in the case of service machines, and its use in the case of civil machines. The fact that 3,000,000 miles have been flown without serious accident to any passenger, differentiates the civil machines from the service machines.

PERSONALS

Married

Flight-Lieut. W. V. HYDE, R.A.F., was married quietly on July 14, at King's Weigh House Church, Duke Street, W., to DOROTHY EVELYN, elder daughter of Mr. and Mrs. E. A. BIGNELL, late Wallington, Surrey.

PHILIP LEE PRANGLEY MARETT, R.A.F., elder son of Lieut.-Col. and Mrs. P. Janvrin Marett, of St. Helier, Jersey, was married on July 4 at Gorey, Jersey, to LORNA, only child of Mr. and Mrs. BEAUCHAMP, of Gorey, Jersey.

Flying-Officer JOHN SEVER PHILLIPS, R.A.F., elder son of the Rev. P. R. Phillips and Mrs. Phillips, of Hildersham Rectory, Cambridge, was married on July 12, at St. James's Church, Piccadilly, to NANCY, third daughter of the late Sir Archer Croft, Bt., of Croft Castle, Herefordshire.

On July 21, 1928, at Isleworth, GEORGE R. VOLKERT, of Grove Park, W., was married to VIOLET G. HALEY, of Hurlingham.

To be Married

The marriage arranged between Sqdn.-Leader A. E. BARR-SIM and Mrs. WALTER KEMP will take place at a quarter-past twelve o'clock on the 25th inst. at Holy Trinity Church, Sloane Square.

A marriage has been arranged and will take place very quietly in Paris early in August, between Flt.-Lieut. B. E. EMBRY, A.F.C., R.A.F., younger son of the Rev. J. Embry, and HOPE, younger daughter of the late Capt. C. S. ELLIOT, R.N., and Mrs. Elliot, 24, rue Constantinople, Paris.

The marriage of Group Captain W. F. MACNEECE FOSTER, C.B.E., D.S.O., D.F.C., and Miss JEAN BRUCE will take place at St. Peter's, South Weald, Essex, at a quarter-past two o'clock on Tuesday, August 14.

REVIEWS OF BOOKS*

THIS is an age of air exploration. In rapid succession the largest stretches of ocean and the frozen wilds at the top of the world have been crossed within the last few months. The band of air explorers is not large and it is not likely to grow much larger, for the world is limited in size and an aeroplane covers great distances at a time. Prominent amongst that band today is Comdr. R. E. Byrd, U.S. Navy (retired), who reached the North Pole by air in May, 1926 with the late Mr. Floyd Bennett and flew the Atlantic in June, 1927. He has spent all his life in adventure, and in his book "Skyward" it is recorded modestly and interestingly. In particular his experience is valuable in that he has brought to bear a scientific interest in all his work and has never deliberately attempted a voyage for the sake of voyage alone.

Actually he was only the fourth pilot to fly the Atlantic on the non-stop route, but if desire, preparation, and study had brought their just reward he should have been first.

It is clear from his story that he had to fight hard for his experiences. To commence with it was only through the surgeons' unusual generosity that an air career was opened to him, for whilst serving with the Navy he smashed his foot and ankle, and thereafter seemed doomed to a swivel-chair and desk, against which his energetic nature revolted. It was in the autumn of 1917 that he went to the Pensacola seaplane base for flying instruction, at a time when the country was seething with excitement over Congress's declaration of war.

His description of training there gives a vivid insight to the dangers and inexperience prevalent in flying at that time. He went solo after six hours' tuition, became a regular officer on the base, and was detailed to a board of inquiry concerned with the deaths of so many pupils. The tail-spin seemed the particular death-trap, then, until a Naval pilot got into a spin one day and accidentally kicked the high side of the rudder, which got him out of the spin. Immediately Byrd graduated his thoughts turned to an attempt upon the Atlantic, and in the spring of 1918, when the Americans were building the large NC-I flying-boat, he conceived the idea of delivering it by air to the Commander-in-Chief in Europe via the Azores. He tried to pull the strings at his command, and, in the hope of success, he put compasses into machines at Pensacola and practised navigation out of sight of land. He got very near his objective, then disappointment singled him out and he was drafted to command United States air forces in Canada, where he laid down new air stations.

Meanwhile the U.S. Navy prepared for the Atlantic flight, and Byrd anticipated the arrival of the flying-boat at Halifax, where he had installed a base. But the Armistice came, nothing had been done, and he was ordered back to Washington. Later the plans were restarted, and Byrd, in spite of general orders which should have banned him, managed to become a member of the board established to see the flight through. He mentions that during one test of the NC-I 51 men were on board. Finally, his actual part in the adventure was to be on board the NC-3 when the boats flew up to Trepassey, Newfoundland, where he sadly watched the great departure on May 16. But Byrd was a fighter. With the war over and his pet Atlantic project denied him, he turned to the political side of American aeronautics and fought to effective purpose against the United Air Force Service scheme as proposed by Gen. W. Mitchell. The young airmen of Byrd's party took their cue, he said, from the experience of the amalgamation of the air units in England. They won the fight in the end.

When the R.38 broke up over Hull in 1921, Byrd would have met his death in it had he exploited his superiority as an officer over a rating. Byrd came to England just before the test, having managed a late appointment on the ship for the voyage to England, but a late arrival at Howden put him off the list designated for the test flight. When he climbed into the ship at Howden to arrange a position, the only mechanic he could have changed with looked so disappointed that Byrd's generosity deterred him. Thus he saved his life.

"Skyward" is extremely interesting. Byrd is reflective, impressionable, and he can express himself well. In his final chapter he details the plans for his coming expedition to the Antarctic.

An Answer to Neon

The second book under review also covers the history of an airman, but, on account of his longer, more official, and more intimate experience, it also covers an important history in British naval aviation. It reveals the political side and the origins of fundamental developments. Rear-Admiral Murray F. Sueter, C.B., R.N., is the author, and his sub-titles claim that it exposes the great Neon myth and asks for fair play for our airmen. Neon will be remembered as the unknown author who recently wrote a book called the "Great Delusion," in which he implied that the enthusiasts of aviation were suffering from a great delusion, as its future could not possibly equal anticipations, although he admitted briefly that the aeroplane had some utility. This critic was widely attacked in the technical and daily press with answers which were almost in absolute unison. The great delusion was readily admitted. The only difference of opinion with Neon was as to who possessed it.

Admiral Sueter has stepped in to make a thorough answer, to pick up Neon's negative results, and, from facts and experiences, expose them to positive results. He has a vast mass of material to work on, for his work in British naval aviation commenced with the organisation of the Royal Naval Air Service with Mr. Churchill's powerful support. Airships, kite balloons, flying-boats, and torpedo planes were attended by him in their earliest developments. He had orders placed for airships and torpedo-planes before the War. The former were placed in Germany, France and Italy, for England had not then started to construct except for the rigid type, and he went abroad to take part in the trials.

Felixstowe, the home of flying-boat trials and research in this country, was started by him, and so was a kite balloon school at Roehampton. Long before the War he gave thought to torpedo-planes, and eventually called in the assistance of Mr. T. Sopwith, who duly produced a machine from which a Whitehead torpedo was successfully dropped at Calshot in 1914. Then, during his period of administrative work at the Admiralty in War-time he again called in Mr. Sopwith's aid, and also the late Mr. Horace Short's and Mr. Robert Blackburn's.

His part in the airship history during the War was to have produced the SS airships and the Coastal types to combat the menace of the enemy submarine. He commanded the R.N.A.S. units in Southern Italy in 1917. The political issues which do not come within the province of most books by those whose careers have been in aviation are brought out by him, revealing, for instance, the struggle to induce the Sea Lords to continue with an airship programme after the wreck of the Mayfly. The Admiral ends his volume with comments on contemporary events.

*"*Skyward*" by Com. R. E. Byrd, U.S. Navy (Retired): (G. P. Putnam & Sons, 15s. net.)*
*"*Airmen or Noahs*" by Admiral M. F. Sueter: (Sir Isaac Pitman & Sons, Ltd., 25s. net.)*

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London's Air Defences

THE Air Defence Territorial Army Units in London are preparing for their annual collective training in camp. During the summer both searchlight and anti-aircraft units have been exercised at their home stations and R.A.F. Squadrons have co-operated in the training. Recently the Auxiliary Air Force Squadrons stationed at Hendon have been employed during the week-ends in co-operation with Air Defence Ground Units. This co-operation is interesting because both the air and the ground work is done by officers and other ranks of the Auxiliary Air Force and Air Defence formations, who give up their week-end leisure to fly, or to operate the searchlights and anti-aircraft guns. Both the Auxiliary Air Force Squadrons and the Anti-Aircraft Ground Units will go to their annual camp in August. Here again the co-operation will be continued and the volunteers will spend their holidays in the country, where their training will culminate in exercises designed to operate the Home Defence Organisation.

Kenya Colony News

MR. J. GRAHAM DAWSON, of Nairobi, Kenya Colony, informs us in an interesting letter that two Romeo 'planes, (450-h.p. Bristol-Jupiter engines) of the Italian Air Force arrived there on May 31. Major Bitossi was in charge. The flight of four machines left Naples some time before to proceed to Kismayu and Mogadishu in Italian Somaliland. All went well until Malakal—on the Nile—was reached, where one machine had to return to the aerodrome owing to some slight trouble. The others stopped up, and later had to make a forced landing owing to shortage of petrol. Some damage was caused to two machines. Major Bitossi had an adventurous time walking to Mongalla to obtain relief, along the banks of the Nile for four days, for on more than one occasion rivers had to be swum.

FLIGHT
AIRCRAFT ENGINEER AIRSHIPS

THE ROYAL AIR FORCE

London Gazette, July 17, 1928.

General Duties Branch

N. W. A. Cullum is granted a short service commn. as Pilot Officer on probation with effect from July 6, and with seniority of June 29.

The following Pilot Officers are promoted to rank of Flying Officer :—J. L. Adams (April 1) ; J. Clarke, J. C. A. Johnson, J. Norwood, T. J. Arbuthnot, G. F. Whistondale (July 11). The following Pilot Officers on probation are confirmed in rank :—G. E. E. Singleton, A. P. Miller, G. R. Jackson, F. W. Murison, H. Box, K. F. Jones, R. W. M. Clark, V. S. W. Smyth, I. B. Beesley, A. R. Combe, J. R. Mathews, G. K. Horner, H. J. Cross, U. H. Mignon, O. G. Williams, P. W. M. Wright, C. E. V. L'E. Feasey, M. G. Sedorski, D. J. Hughes-Morgan, F. T. K. Bullmore (Sec. Lt., R.A., T.A.) (July 18) ; L. M. Woolveridge (July 20).

The following Flight Lieuts. are seconded for duty with the Estonian Government (July 5) :—A. C. Collier (and is granted acting rank of Squadron Leader whilst so seconded), G. C. Gardiner, D.F.C., O. E. Worsley.

Flight-Lieut. R. Pyne, D.F.C., ceases to be seconded for service as Aide-de-Camp to the Governor of the United Provinces (May 16) ; Lieut.-Cdr. A. N. Grey, R.N., Flying-Officer, R.A.F., relinquishes his temp. commn. on return to naval duty (July 15). The following Lieuts., R.N., Flying Officers, R.A.F., cease to be attached to R.A.F. on return to naval duty :—F. M. R. Stephenson (July 10) ; H. J. St. J. Fancourt, J. B. Heath (July 12).

Flying Officer N. Vintcent is removed from half-pay list, scale B, on being granted leave without pay (June 11) ; Flying Officer N. Liddall is placed on retired list on account of ill-health (July 13). The following Flying Officers are transferred to Reserve, Class A :—A. I. Riley, A.F.C. (July 3) ; H. L. R. Gough, T. R. Wheatley (July 14) ; P. R. Stroud (July 16). Flying Officer J. W. New is transferred to Reserve, Class C (July 14).

The following officers resign their short service commns. :—Pilot Officer G. R. T. Clarke (July 14) ; Pilot Officer on probation J. O. C. Huggett (July 16). The short-service commns. of the following Pilot Officers on probation are terminated on cessation of duty :—D. Timms (July 14) ; E. E. Carter (July 16).

Medical Branch

The following Flying Officers are promoted to rank of Flight Lieut. (July 13) : J. O. Priestley, D.M.R.E. ; J. Twohill, M.B.

RESERVE OF AIR FORCE OFFICERS

General Duties Branch

The following are granted commns. as Pilot Officers on probation :—Class A.A. (ii).—J. G. Naz, E. W. Seymour-Hosley (June 20) ; J. L. Browne, P. F. England, W. W. L. Jones, G. H. Newberry (July 2) ; G. Nelson (July 3). Special Reserve.—J. B. R. Brooke (June 25).

Pilot Officer on probation G. E. Langdon is confirmed in rank) July 11) ; Flying Officer H. S. Eaton is transferred from Class C to Class A (June 13) ; Flying Officer H. W. Pierce is transferred from Class A to Class C (July 12) ; Flying Officer M. J. Berlyn is transferred from Class AA to Class C (March 25) ; Sqdn.-Ldr. R. Hutton relinquishes his commn. on completion of service (May 16).

Stores Branch

Flight-Lieut. F. R. Berresford relinquishes his commn. on completion of service (May 28).

Medical Branch

The following Flight Lieuts. relinquish their commns. on completion of service :—T. A. G. Hudson (July 4) ; C. H. B. Thompson (July 13).

ROYAL AIR FORCE INTELLIGENCE

Appointments.—The following appointments in the Royal Air Force are notified :—

General Duties Branch

Wing Commander E. R. C. Nanson, D.S.C., A.F.C., to R.A.F. Depot, Uxbridge, 15.6.28.

Squadron-Leader A. W. Mylne, to Coastal Defence Torpedo Bomber Flight, Donibristle, 2.7.28.

Flight Lieutenant H. Hackney to R.A.F. Depot, Uxbridge, 19.6.28.

Flight-Lieutenants : H. W. Woollett, D.S.O., M.C., to No. 43 Sqdn., Tangmere, 26.6.28. L. J. Riordan, A.F.C., to R.A.F. Depot, Uxbridge, 19.5.28. R. de L. Stedman, to R.A.F. Depot, Uxbridge, 8.6.28. R. Pyne, D.F.C., to R.A.F. Depot, Uxbridge, 19.5.28. L. B. Duggan, to No. 421 Flight, 9.7.28. J. A. McDonald, to No. 4 Squadron, S. Farnborough, 22.5.28. H. S. Sandiford, to R.A.F. Depot, Uxbridge, 4.7.28. L. M. Iles, A.F.C., to R.A.F. Reception Depot, West Drayton, 5.7.28. H. I. T. Beardsworth, to Home Aircraft Depot, Henlow, 25.7.28.

Flying Officers : E. E. Fallick, to Home Aircraft Depot, Henlow, 18.6.28. H. J. Paine, to Station H.Q., Hinaidi, 28.6.28. H. A. S. Byrne, to R.A.F. Depot, Uxbridge, 14.6.28. (Hon. Flight-Lieut.) F. P. Smythies and G. V. T. Thomson, to Coastal Defence Torpedo Bomber Flight, Donibristle, 2.7.28. F. R. Lines, to No. 208 Sqdn., Middle East, 23.6.28.

Pilot Officers: S. Hatton to No. 422 Flight, 18.6.28. R. David to No. 405 Flight, Donibristle, 21.6.28. P. D. Cracroft to No. 406 Flight, Donibristle, 21.6.28. The undermentioned Pilot Officers are posted to the R.A.F. Depot, Uxbridge, on appointment to Short Service Commissions (on probation), with effect from 29.6.28. J. R. Ayling, T. F. Balfour, R. L. Bennet, A. K. H. Binley, J. H. Brown, R. J. Clare-Hunt, J. C. L. Claxton, A. G. Cole, R. H. Coupe, S. A. Davis, F. C. Edney Hayter, R. C. W. Ellison, D. L. Iremonger, J. M. Israel, E. G. James, G. W. J. Jarrett, G. R. O'C. Lempriere, C. N. McLoughlin, W. C. Garrett-Petts, J. G. Reiss, J. D. Robertson, H. E. Sales, I. M. Smith, R. H. Spurrier, W. G. Stevenson, K. G. Vandyck, and F. K. Wood.

Pilot Officers : K. F. Jones, to R.A.F. Depot, Uxbridge, 18.6.28. L. S. Tindall, to No. 39 Sqdn., Bircham Newton, 26.6.28. N. W. A. Cullum, to R.A.F. Depot, Uxbridge, on appointment to a short service commn. (on probation), 6.7.28.

Stores Branch

Squadron-Leaders : J. Walker, to No. 2 Stores Depot, Altrincham, 17.7.28. F. D. D. Gaussen, to Supply Depot, Middle East, 30.6.28.

Accountant Branch

Flight-Lieutenants : H. E. Cardwell, A.F.C., to R.A.F., M.T. Depot, Shrewsbury, 2.7.28. P. J. Farmer, to R.A.F. Depot, Uxbridge, 26.5.28.

Pilot Officer F. C. Rendle, to No. 4 Sqdn., S. Farnborough, 30.6.28.

Flight-Lieutenants : R. J. K. Chattey, to R.A.F. Depot, Uxbridge, 8.6.28, E. J. Mockler, M.B., to Aircraft Park, India, 21.10.27. P. H. Perkins, to R.A.F. General Hospital, Iraq, 18.6.28.

Flying Officer J. F. McGovern, M.B., to R.A.F. General Hospital, Iraq, 22.6.28.

NAVAL APPOINTMENTS

The following appointments have been made by the Admiralty :—

Lieut.-Commr. (Flt.-Lieut. R.A.F.).—E. J. S. Knocker, to *Marlborough* (July 25).

Lieutenants (Flying-Officers, R.A.F.).—G. R. M. Robertson, to *Royal Oak* (undated) ; I. N. Grant, to *Cairo* (Aug. 1) ; H. L. St. J. Fancourt, to *Renown* ; and J. B. Heath, to *Centaur* (July 12) ; and F. M. R. Stephenson, to *Constance* (July 10).

The following appointment was made by the Admiralty, on July 3 :—Surgn. Lieut. F. C. M. Bamford, M.B., to *President*, for two weeks' course at R.A.F. Medical Officers' School of Instruction (July 2).

Promotions

Sub-Lieutenant H. L. Hayes (Flying Officer, R.A.F.), to rank of Lieut. (seny., May 30).

Sub-Lieut. (Flying Officer, R.A.F.) H. H. Caddy, to rank of Lieut. (seny., June 15).

Sub-Lieuts. : R. T. Lampard, R. Birch, J. C. H. Helson, and the Hon. R. D. Coleridge, to rank of Lieut. (seny, June 15).

Royal Marines

Lieutenant (Flying Officer, R.A.F.) K. Hunt, to *Columbine*, and for full flying duties in 406 Flight (May 4), previous orders cancelled.

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AIR MINISTRY NOTICES

Croydon Aerodrome : Communications Office

OWING to the difficulty experienced in the past in obtaining the necessary particulars as to load, destination, etc., in connection with private aircraft landing at or leaving Croydon Aerodrome, pilots of such aircraft are requested to report at the Communications Offices of the Aerodrome on landing and before departing by air in order that the necessary formalities may be compl ted.

(No. 54 of 1928.)

Royal Air Force. Vacancies for Apprentice Clerks

THE Air Ministry announces :—Sixty vacancies exist in the Royal Air Force for well-educated boys between the ages of 15½ and 17 to enter as apprentice clerks. Approximately 30 of the posts will be filled by means of an open competition which will be held by the Civil Service Commissioners in October at various centres, and the remaining 30 by direct entry of boys who have obtained an approved school certificate. Successful candidates will be required to complete a period of 12 years' Regular Air Force service after reaching the age of 18, in addition to the training period. At the age of 30 they may return to civil life or may be permitted to re-engage to complete time for pension.

Boys entered under this scheme undergo a two years' course of training in clerical duties, typewriting, shorthand, book-keeping and practical office routine, during which time their general education is continued under a staff of graduate teachers.

The apprentice clerks are paid 1*s.* a day for the first year and 1*s.* 6*d.* a day afterwards until they have both attained the age of 18 and have been posted for duty after passing their final examination. The subsequent *commencing* rates of pay, varying from 3*s.* to 4*s.* 6*d.* a day (21*s.* to 31*s.* 6*d.* a week), depend upon the degree of success achieved at this examination. In addition, they receive free board and lodging.

Detailed information regarding the apprentice clerk scheme can be obtained from the Royal Air Force, Gwydyr House, Whitehall, S.W.1.

Royal Air Force Flying Accidents

THE Air Ministry regrets to announce that as the result of an accident near Amman to a D.H. 9a machine of No. 14 (Bombing) Squadron, Amman, on June 26, Pilot Officer John Henry Lorraine Maund, the pilot of the aircraft, and 363194 A.C.1 Jack James Heatherstone Middleton were killed.

As the result of an accident at Clifton, near Henlow, to an Avro machine of the Royal Air Force Practice Camp, Sutton Bridge, on July 1, Flight-Lieut. Harold Charles Calvey, the pilot of the aircraft, and 3720 Flight-Sergt. William Charles Hollier were killed.

As the result of an accident at Quetta, India, to a Bristol Fighter machine of No. 31 (Army Co-operation) Squadron, Quetta, on July 3, Flying Officer Clarence Reginald McEvoy, the pilot of the aircraft, and 363249 L.A.C. James Leslie Mason were killed.

As the result of an accident at Mosul to a Bristol Fighter machine of No. 6 (Army Co-operation) Squadron, Mosul, on July 4, Flying Officer Alexander Bruce Kay, the pilot of the aircraft, died from injuries, and the passenger, 357613 Leading Aircraftman Alfred Harry Bolton, was slightly injured.

As the result of an accident at Corstorphine to an Avro machine of No. 603 City of Edinburgh (Bombing) Squadron, Auxiliary Air Force, on July 7, Pilot Officer John Temple Lyall Shiells, Auxiliary Air Force, the pilot and sole occupant of the aircraft, was killed.

SIDEWINDS

OWING to the expansion of output of "Cerric" lacquers and Cellon aeroplane dopes, it was found that the facilities available at the present Cellon Works at Richmond, were not sufficient to cope with the growing demand. It was, therefore, decided several months ago to purchase 5 acres of land at Ham, Surrey, for the erection of new works. The erection of these works is progressing very rapidly, and it is hoped they will be completed by the end of the year. For the first year or so after the opening of the new works they will be run as an additional unit to the present works at Richmond, and during that period the new works will be increased still further, so that by 1930 it will be possible to cease manufacture at the Richmond works.

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"Ethyl" Ban Removed

THE Anglo-American Oil Co., Ltd., have received a cable from New York stating that the authorities, by a resolution adopted by the Board of Health (of New York Department of Health), have removed the restriction of ethyl petrol. The investigations, it is stated, failed to disclose any scientific evidence indicating that the use of ethyl petrol as a motor fuel had produced any effects deleterious to life or health.

A Commercial "Marriage"

FROM now onwards the industrial rubber products of Chas. Macintosh and Co., Ltd., the firm whose founder added the word "macintosh" to the dictionary, are to be marketed under the name "Macinlop," so signifying the fusion of interests between the older organisation and the Dunlop Rubber Co., Ltd.

New Vickers Companies

WE are advised that Vickers, Ltd., have floated a subsidiary company—Vickers (Aviation), Ltd.—to take over their works at Weybridge, Surrey, for the manufacture of aircraft, aircraft accessories, and equipment. The directors are Sir Robert McLean (chairman) and Sir Mark Webster Jenkinson, K.B.E., F.C.A. Mr. H. H. Duvall, A.C.A., is the secretary. We understand, also, that they have floated a subsidiary company—Vickers (Crayford), Ltd.—to take over their works at Crayford, Kent, for the manufacture of motor bodies, variable-speed gears, agricultural tractors, automatic looms, and other engineering products.

* * * *

PUBLICATIONS RECEIVED

Aeronautical Research Committee Reports and Memoranda: No. 1124 (*Ae.* 297).—Wind Tunnel Tests with High Tip Speed Airscrews. The Characteristics of a Conventional Airscrew Section, Aerofoil R. & M. 322, No. 3, at High Speeds. By G. P. Douglas and W. G. A. Perring. September, 1927. Price 9d. net. *No.* 1125 (*Ae.* 298).—An Analysis of Some Causes of Discrepancy Between the Calculated Failing Load of the Structure of an Aircraft and the Load at which Failure Occurs on Strength Test. By H. B. Howard and K. T. Spencer. August, 1927. Price 6*d.* net. H.M. Stationery Office, Kingsway, London, W.C.2.

Airships Today. British Airships, Ltd., 21, Northumberland Avenue, London, W.C.2.

Flying. By Lieut.-Col. W. Lockwood Marsh, M.A. The Modern Pictorial Library. Edited by S. P. B. Mais, M.A. The Richards Press, Ltd., 90, Newman Street, London, W.1. Price 1*s.*

Aeronautical Research Committee Reports and Memoranda: No. 1122 (*Ae.* 295).—List and Drag of Three Model Aeroplanes: Comparative Tests in Atmospheric and Variable-Density Wind Tunnels at the Same Reynolds' Number. By H. C. H. Townend. June, 1927. Price 6*d.* net. *No.* 1123 (*Ae.* 296).—Wind Tunnel Tests with High Tip Speed Airscrews. The Characteristics of Bi-Convex No. 2 Aerofoil Section at High Speeds. By G. P. Douglas and W. G. A. Perring. September, 1927. Price 9*d.* net. H.M. Stationery Office, Kingsway, London, W.C.2.

Gamecock Aeroplane Jupiter VI Engine. Air Publication 1299. *March,* 1928. H.M. Stationery Office, Kingsway, London W.C.2. Price 1*s.* 6*d.* net.

Lion Aero Engines (*Series V and VA*). *Air Publication* 1267. *March,* 1928. H.M. Stationery Office, Kingsway, London, W.C.2. Price 2*s.* 6*d.* net.

The Air Pilot Monthly Supplement, No. 44. *June,* 1928. The Air Ministry, Kingsway, London, W.C.2.

Bulletin No. 7. *June* 5, 1928. The Daniel Guggenheim Fund for the Promotion of Aeronautics, Inc., 598, Madison Avenue, New York, U.S.A.

Progrès de la Métallurgie et Leur Influence sur l'Aéronautique. By M. Gaëtan Py. Blondel la Rougery, 7, Rue Saint-Lazare, Paris. Price 5 fr. net.

Berichte der Aeromechanischen Versuchsanstalt in Wien. By Ingenieur Richard Katzmayr. Vol. I. Richard Carl Schmidt and Co., Lutherstrasse 14, Berlin, W.62. Price Rm. 10.

Technical Report of the Aeronautical Research Committee for 1926–7 (*with Appendices*). H.M. Stationery Office, Kingsway, London, W.C.2. Price £1 15*s.* net.

High Speed Steel. By A. R. Page. Heat Treatment Bulletin, No. 40. May, 1928. Automatic and Electric Furnaces, Ltd., North Road, Holloway, London, N.7.

Proceedings, Session 1927-28. *Vol. XXII.* Rugby Engineering Society, Rugby. Price 10*s.* 6*d.*

Royal Air Force Pocket Book. Air Publication 1081. H.M. Stationery Office, Kingsway, London, W.C.2. Price 3*s.* net.

Aeronautical Research Committee Reports and Memoranda: No. 1114 (*Ae.* 287). Charts for the Calculation of Airscrew Thrust and Torque Coefficients. By J. D. Coales, D.Sc. Sept., 1927. *No.* 1119 (*Ae.* 292).—Model Experiments with Rear Slots and Flaps on Aerofoils R.A.F. 31 and R.A.F. 26. By H. B. Irving, A. S. Batson and A. L. Maidens. Nov., 1927. Price 6*d.* net. H.M. Stationery Office, Kingsway, London, W.C.2.

The Accessory. May, 1928. *Vol.* 14. *No.* 148. Brown Brothers, Ltd., Great Eastern Street, London, E.C.2.

Airmen or Noahs. By Rear-Admiral Murray F. Sueter, C.B., R.N., M.P., Sir Isaac Pitman and Sons, Ltd., Parker Street, Kingsway, London, W.C.2. Price 25*s.* net.

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* * * *

AERONAUTICAL PATENT SPECIFICATIONS

(*Abbreviations*: Cyl. = cylinder; i.c. = internal combustion; m. = motor. The numbers in brackets are those under which the Specifications will be printed and abridged, etc.)

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Published July 19, 1928

6,871. G. H. LANCHESTER. Means for effecting an angular adjustment or movement between two connected parts. (292,651.)
11,688. A. H. WRIGHT. Rotating-cylinder engines. (292,738.)
27,213. H. JUNKERS. Apparatus for facilitating the starting of airplanes. (292,826.)

Published July 26, 1928.

2,344. LUFTSCHIFFBAU ZEPPELIN GES. Airships, and methods of operating the same. (268,310.)
3,024. F. G. T. DAWSON. Disposition of engines on aircraft. (293,063.)
3,025. F. G. T. DAWSON. Aircraft. (293,064.)
8,921. G. CONSTANTINESCO. Means for securing bodies on rotating shafts. (293,122.)
9,117. GLOSTER AIRCRAFT CO., LTD., and H. E. PRESTON. Aircraft-control devices. (293,134.)
21,076. GLOSTER AIRCRAFT CO. LTD., and W. H. PEACHEY. Lubrication of rotary valves for fluid-pressure engines. (293,216.)

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1,410. L. A. POLLARD and H. G. HAWKER ENGINEERING CO., LTD. Device for facilitating manœuvring on the ground landplanes provided with landing-wheels, etc., applicable also as lifting-jack. (293,273.)

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